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ENVIRONMENTAL RELEASE OF ASBESTOS FROM COMMERCIAL PRODUCT SHAPING

by

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For the first time, the release of respirable asbestos fibers has been quantified in terms of standard mechanical forces using widely accepted methodology and specified QA/QC procedures. Both fabrication of new products from asbestos containing materials and repair or removal of in-use asbestos containing products contribute to the total environmental exposure to asbestos. There is a need to assess these materials and operations according to the potential severity of their fiber releases. This research consisted of performing several simulated industrial/commercial shaping operations on several asbestos containing products. The rates of fiber release, expressed as fibers per cubic centimeter of air inside an enclosed test chamber per gram of asbestos milled, were measured. The filter samples were analyzed by the transmission electron microscope (TEM) method. Lengths, widths, and type of asbestos were reported for fibers and other asbestos structures. In addition, samples were taken for phase contrast microscopic (PCM) analysis during most of the experiments. The results of these analyses are compared.

Research on the release of asbestos/substitutes resulting from commercial product manufacture, use, and disposal is of continuing importance. More information about the quantities and dimensions of fibers released during these activities is required in order to develop effective control methods to help protect the public health.

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FOREWORD

The U.S. Environmental Protection Agency is charged by Congress with protecting the Nation's land, air, and water systems. Under a mandate of national environmental laws, the agency strives to formulate and implement actions leading to a compatible balance between human activities and the ability of natural systems to support and nurture life. The Clean Water Act, the Safe Drinking Water Act, and the Toxics Substances Control Act are three of the major congressional laws that provide the framework for restoring and maintaining the integrity of our Nation's water, for preserving and enhancing the water we drink, and for protecting the environment from toxic substances. These laws direct the EPA to perform research to define our environmental problems, measure the impacts, and search for solutions.

The Water Engineering Research Laboratory is that component of EPA's Research and Development program concerned with preventing, treating, and managing municipal and industrial wastewater discharges; establishing practices to control and remove contaminants from drinking water and to prevent its deterioration during storage and distribution; and assessing the nature and controllability of releases of toxic substances to the air, water, and land from manufacturing processes and subsequent product uses. This publication is one of the products of that research and provides a vital communication link between the researcher and the user community.

There is a need to assay the potential environmental fiber release from various asbestos products subjected to standardized use factors such as those that occur during installation and/or repair in-situ since this contributes to the burden of asbestos exposures. This research project attempts to evaluate the rate of release per unit weight of material machined as quantified by weight and number of fibers and the analysis of fibers according to length and width using the transmission electron microscope (TEM) methodology.

Francis T. Mayo, Director
Water Engineering Research Laboratory

ABSTRACT

The overall objectives of this research were to develop and verify testing protocols for quantifying fiber release from commercial asbestos products and proposed substitute materials during common fabricating operations, and to obtain actual fiber release data for specific asbestos products. The test protocol is to be well-defined and the effects of varying parameters were documented so as to provide applicable standard procedures for use under various conditions. The protocol is intended to provide industry and government with a scientifically reliable technique with which to rank the fiber release potential of various asbestos product/commercial operation combinations. This technique will measure the release of respirable asbestos particles/fibers during the performance of routine fabrication operations (sawing, sanding, drilling, etc.) from commercially used asbestos products (sheets, tile, etc.). The results from this technique can be used to define a "release potential index" which could be of significant value in assessing the risk associated with various combinations of operations and products. The technique can be used to rank, preliminarily, the most common asbestos materials/operations to determine which combinations potentially present the greatest environmental risk. For the first time, the release of respirable asbestos fibers in terms of standard mechanical forces using widely accepted methodology and specified QA/QC procedures has been defined.

Both fabrication of new products from asbestos containing materials and repair or removal of in-use asbestos containing products contribute to the total environmental exposure to asbestos. There is a need to assess these materials and operations according to the potential severity of their fiber releases. This research consisted of performing several simulated industrial/commercial shaping operations on several asbestos containing products. The rates of fiber release, expressed as fibers per cubic centimeter of air inside an enclosed test chamber per gram of asbestos milled, were measured. The filter samples were analyzed by the transmission electron microscope (TEM) method. Lengths, widths, and type of asbestos were reported for fibers and other asbestos structures. In addition, samples were taken for phase contrast microscopic analysis during most of the experiments. The results of these analyses are compared to the analyses of the samples that were taken simultaneously and analyzed by TEM.

Research on the release of asbestos/substitutes resulting from commercial product manufacture, use, and disposal is of continuing importance. More information about the quantities and dimensions of fibers released during these activities is required in order to develop effective control methods to help protect the public health.

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SECTION 1

INTRODUCTION

The scientific community is in general agreement that exposure to asbestos dust increases the risk of: (1) asbestosis, a fibrotic disease of the lung whereby imbedded dust fibers are surrounded by scar tissue; (2) lung cancer; (3) mesothelioma, a cancer of the membrane lining the chest and abdomen; and (4) cancers of the gastrointestinal tract. Prevailing opinion is that there is no minimum dose causing the various cancers. The environmental release of asbestos fibers from the use and disposal of numerous products may present widespread harmful exposure to the general public.

Therefore, research on the release of asbestos/substitutes resulting from commercial product manufacture, use, and disposal is of continuing importance. More information about the quantities and dimensions of fibers released during these activities is required in order to develop effective control methods to help protect the public health.

Presently, government agencies such as the National Institute for Occupational Safety and Health (NIOSH) and the Occupational Safety and Health Administration (OSHA) are directing attention to the hazards of asbestos exposure through proposal of more stringent regulations. Current OSHA standards limit asbestos exposure to a time-weighted average of two fibers per cubic centimeter over an 8-hour period, with a 15-minute ceiling limit of ten fibers per cubic centimeter. The existing standard is based on counts of fibers 5 microns or longer in length and having an aspect ratio greater than 3:1 using phase contrast microscopy (PCM) to analyze samples collected from the breathing zone.

This notwithstanding, the total risk from the manufacture, processing, use, and disposal of asbestos products is regulated under the Toxic Substances Control Act (TSCA) by the EPA Office of Pesticides and Toxic Substances (OPTS). In addition, the EPA leads an Interagency Task Force investigating asbestos hazards.

The EPA Industrial Environmental Research Laboratory in Cincinnati (IERL-Ci) provides technical services to the program offices. In this instance, IERL was requested to support OPTS in rulemaking and related TSCA activities concerning the Asbestos/Substitutes Program. Engineering-Science (ES) was subsequently retained by IERL as the contractor to carry out the laboratory and field experiments to support the proposed rules.

The overall objective of the research to be performed was to develop (if unavailable) and verify testing protocols for fiber release of commercial asbestos products and product substitute materials. A secondary objective was to obtain release data for specific asbestos products where possible. Because of the large number of asbestos products and the difficulties of making field measurements IERL developed an incremental approach to achieving the program objectives. The research would be conducted sequentially. First a series of glove box tests would be conducted to develop and verify sampling and analytical measurement techniques. If successful, a model would be developed to estimate field concentrations based on the glove box results. However, before the model could be used, it would be tested in a controlled environment (a standard test room) representative of the field conditions. If the model proved to be an acceptable prediction under controlled conditions, it would then be verified in the field by testing it out under actual working conditions. Therefore, the overall program was divided into four research areas:

- Research Area I - perform glove box experiment of asbestos release rates to develop and verify consistent fiber generation and sampling analytical procedures.

- Research Area II - develop a mathematical model that accounts for the environmental field parameters and predicts asbestos breathing zone concentration in the field using glove box release rate data.

- Research Area III - perform full room tests (in a standard test room) simulating field conditions in an attempt to calibrate the field model.

- Research Area IV - conduct field experiments to verify the usefulness of the model in predicting asbestos breathing zone concentrations in the field from glove box asbestos release data.

ES was requested by IERL to conduct the glove box testing program identified in Research Area I. The project objectives were similar to the overall program objectives, namely, to verify testing protocols for fiber release of commercial asbestos products and proposed substitute materials. However, the project would be limited to developing test protocols for experiments conducted on the glove box scale. As in the overall program, a secondary objective of the glove box experiments was to obtain release data for specific asbestos products. The glove box project was divided into three phases:

- Phase I - preliminary assessment to define the status and applicability of any existing methods.

- Phase II - develop a standard test method.

- Phase III - test the potential fiber release of some representative asbestos products.

Phase I was an assessment of previously existing laboratory procedures used to estimate asbestos release rates and/or exposure in the atmosphere. No reproducible methods could be found for generating and measuring the release of asbestos fibers during industrial operations on asbestos-containing materials. Also, no procedure that could be considered controlled and reproducible was identified. Therefore, IERL-Ci proceeded with the design, construction, and testing of the apparatus and identification of the analytical techniques that together would constitute such a method and tested the reproducibility of the method. The result of Phase I was a recommendation of a test procedure for measuring the asbestos fiber released during commercial product use. Phase II fully developed and tested the laboratory procedure. The objective of Phase II was to evaluate the precision of the laboratory procedure and to determine its sensitivity to variation of fiber generating and sampling factors. Phase III included additional precision tests and a compilation of an asbestos fiber release potential index that ranked various pairs of material operations according to their potential for causing worker and environmental exposure to asbestos fibers. In addition, simultaneous samples were taken and analyzed by NIOSH methods during 32 of the experiments. The results of these tests were compared to the transmission electron microscope results. Nuclepore® filters from five runs were divided and portions submitted to the U.S. EPA/IERL-Ci laboratory for duplicate analysis.

The test method that was developed for the project is referred to in this document as the "glove box" method. An apparatus was developed that allows reproducible generation of a cloud of asbestos fibers within a confined volume. The fibers are generated by means that are physically similar to common industrial operations. The equipment was constructed from readily available parts so that it could be reproduced by other investigators. The apparatus consists of a table top glove box, a controlled, variable speed work feeder, a remote power source coupled to the tool by a flexible drive shaft, a fan to provide consistent mixing within the glove box, a filter holder, and means to withdraw up to four samples at constant rates.

Development of an asbestos fiber release potential index required some means of generation of an aerosol that would allow ranking of industrial or commercial operations on the various products. To this end, the tools and the machining rates and materials to be used mimicked, as closely as is possible, those operations commonly employed. The intent was to reproduce the mechanism of the commercial operation, it was not an attempt to reproduce the commercial operation. The tools were actuated mechanically rather than by hand to enhance the precision and repeatability of the experiments.

The test materials were obtained directly from manufacturers insofar as is possible. Direct contact was made with the quality control department (or other appropriate division) in order to be sure of obtaining materials for which manufacturing specifications were known. These data included the percent asbestos, the nature and composition of binders and extenders, and the results of any other physical and chemical analyses

that are available. The information attainable from manufacturers was inadequate in some cases so the fiber release potential index computations were based on bulk analyses. These analyses were performed at the Mt. Sinai School of Medicine, Environmental Science Laboratory.

A test procedure and a Quality Assurance plan were developed. The analytical procedure of choice was the provisional EPA transmission electron microscopy (TEM) method that was developed for EMSL/RTP by the Illinois Institute of Technology Research (IITRI) under a separate contract. The reproducibility of the procedures was tested during this project by replicate performance of the same experiment (sawing of an asbestos cement sheet) and found to be good. Ultimately, the TEM analysis was chosen over the PCM method because of its superior capacity to provide information about the concentration of very small particles.

There is debate among asbestos researchers as to which configurations of small asbestos particles are hazardous. Some adhere to a strict definition of fibers; others include other structures such as bundles of of fibers, agglomerations of fibers, and fibers adhered to small pieces of binder or other material. The TEM data include counts of all of these structures but fiber release potential factors were calculated only for fibers. All data have been reported to facilitate alternate computations by any reader.

The sampling procedures employed are described in detail in Section 4. The quality assurance and quality control procedures are described in Appendix D, Quality Assurance Plan for Development of a Sealed Test Chamber (Glove Box) Method for Estimating Asbestos Fiber Release from Shaping Operations on Durable Materials (March 1982). The sampling procedure conforms to the method described in USPHS/NIOSH Membrane Filter Method for Evaluating Airborne Asbestos Fibers (DHEW/NIOSH Publications Number 79-127) in all of its major aspects except that Nuclepore® (polycarbonate) filters are used in lieu of cellulose ester filters. The TEM analysis requires that the filter substrate be dissolved from under the carbon coated fibers. The polycarbonate material is much more readily, and gently, dissolved than the cellulose ester material.

The results of the testing program indicate that the primary objective of the project has been achieved. A test procedure has been developed to measure asbestos release rates in a glove box under controlled conditions. In addition, the release rates measured for various product generated by different mechanical operations can be quantified. The results suggest that the overall program can proceed to the subsequent research areas of developing a predictive model and field validation.

SECTION 2

CONCLUSIONS

The literature survey carried out in the early stages of this project revealed that no procedure that could be considered controlled and reproducible existed for generation of an asbestos aerosol by operations similar to commercial/industrial machining of non-friable asbestos bearing products.

A technique was developed for generating such an aerosol. The technique is simple and relatively inexpensive, and is sufficiently flexible to be adapted to mimic a variety of industrial milling operations on a variety of products.

Transmission electron microscopy (TEM) was selected for analysis of the sampled particles because of its ability to discern extremely small particles and to differentiate asbestos from other fibers.

The reproducibility of the technique of the combined generation/analytical system was found to be excellent. Relative standard deviations for repetitive performances of an experiment were typically in the 40% to 80% range.

An index that rates the propensity of six industrial/commercial operations on three asbestos bearing materials was developed. The units of the index are:

$$\frac{\text{Asbestos Fibers}}{(\text{Gram Asbestos Machined})\ (\text{cc Air Sampled})}$$

The experimental procedure maintains the amount of asbestos machined relatively constant so that errors of scale are eliminated and so that the filter samples collected are all loaded properly for TEM analysis. Normalizing the data on the grams of asbestos actually machined during an experiment removes the residual variance within an experimental set and the residual variance among the various experiments. The various material operations tested are listed below in decreasing order of their propensity to generate asbestos fibers.

Material	Operation	Environmental Release Index Value
Asbestos Cement Sheet	Saw (Cut-Off Wheel)	1838
Millboard	Saw (Toothed Blade)	647
Brake Shoes	Grind	465
Asbestos Cement Sheet	Saw (Toothed Blade)	305
Asbestos Cement Sheet	Drill	283
Millboard	Drill	105

Stratification of particles within the aerosol was tested by sampling simultaneously at high and low elevations within the glove box. The aerosol was found to be homogeneous.

Differences in concentrations measured by upward facing as opposed to downward facing filters was tested by sampling simultaneously with upright and inverted filters. No significant difference was found.

Fiber and structure lengths were found to be log-normally distributed. Fiber and structure diameters do not fit the log-normal distribution as well because of the large number of 0.0625 (approximate) micron diameter fibers.

Correlation between TEM results and PCM results was attempted. Samples were taken with Millipore filters during 32 of the experiments, representing four different Material/Operation pairs. No correlation of the PCM analysis of these filters with the TEM analysis of the Nuclepore® filters that were exposed simultaneously could be found. It was determined that only approximately 1% of the structures identified by TEM were longer than 5 microns. It was determined that none of the structures identified as being fibers by the TEM have diameters sufficiently larger to be seen by the PCM. We were unable to correlate any subset of the TEM data with the PCM results.

SECTION 3

RECOMMENDATIONS

The results of this study have suggested several avenues of future research.

1. The testing should be extended to include additional asbestos products and to products containing different types of asbestos fibers.

2. It has been reported that reducing tool speed significantly reduces fiber release. Future work should include testing of slow speed cutting equipment.

3. The efficiency of various vacuum and wetting devices in reducing the amount of asbestos released into the environment should be investigated.

4. The effects of agglomeration and settling on the fiber concentration in the aerosol should be investigated. Agglomeration may significantly affect the concentration and size distribution of suspended fibers.

5. Work on development of a correlation between the transmission electron microscope and phase contrast microscope methods should continue in order to determine whether data collected by the latter may be correlated with health effects data.

6. Means should be developed for relating the data provided by this technique to worker and environmental exposures.

SECTION 4

EQUIPMENT AND METHODS FOR MEASURING AIRBORNE ASBESTOS FIBERS

In order to test the potential for release of fibers from commercial asbestos product use, an asbestos fiber generation system was designed and built to simulate commercial product use. The material/operation (M/O) chosen for evaluating the technique was sawing asbestos cement sheet. The fiber generation system is contained in a controlled atmosphere glove box, as is the sample collection apparatus. Samples are collected on polycarbonate filters and sent to the laboratory for TEM measurement of asbestos fibers. Detailed descriptions of the equipment, general laboratory procedures, and data reduction procedures used in the above steps are given in the following sections. Specific results for each set of tests are described in Section 5.

EQUIPMENT

The equipment used for generating and measuring airborne asbestos consists of the following components:

- Controlled atmosphere glove box
- Fiber generation system
- Air sampling system
- Glove box decontamination unit
- Carbon coating unit
- Transmission electron microscope (TEM)

The first four components were designed, constructed, and operated by ES in the Fairfax, Virginia laboratory. The carbon coating unit was located at the George Washington University in Washington, D.C. and was operated by ES. The TEM was operated by Illinois Institute of Technology Research Institute in their Chicago, Illinois laboratory.

Glove Box

A Labconco controlled atmosphere glove box (Figure 1) served as the sealed test chamber for the fiber generation and air sampling system. The interior volume of the glove box is about 0.33 cubic meters. The glove box provides a completely sealed environment in which to conduct the experiments. The glove box has a 0.01 cubic meter interchange compartment to prevent contamination of room air during passage of materials into or out of the main chamber. Two 20 centimeter diameter glove ports

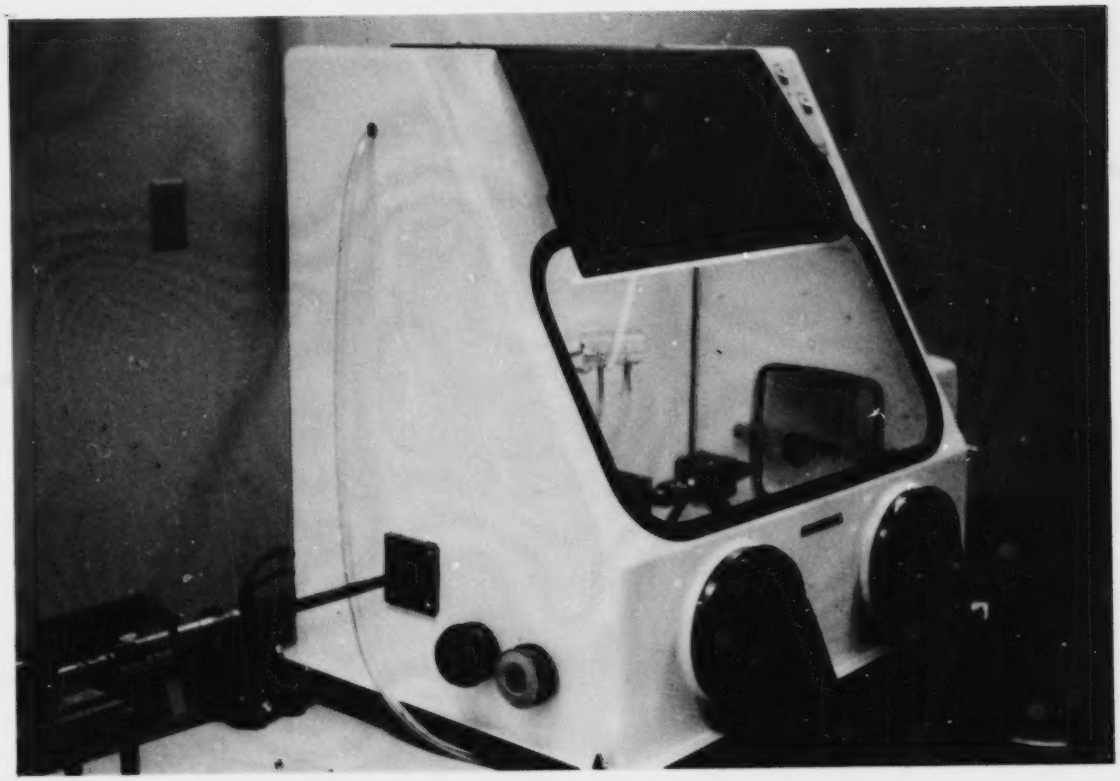

Figure 1. Controlled atmosphere glove box.

are located on the front of the box, with a pair of neoprene gloves clamped to the ports for use in manipulating components inside the test chamber. The glove box was also equipped with a 70 by 48 cm safety glass viewing panel, two 115 volt electrical outlets, and one 15 watt fluorescent light. The glove box was made of fiberglass reinforced polyester material.

The glove box was modified to include ports for four air sampling lines and Swagelok® tube fittings located in the lower back left wall. The Fibrous Aerosol Monitor (FAM) sample line and tube fitting port were installed in the middle of the ceiling of the box. Ports for the circular saw power cable and vacuum (cleaning) tube were installed in the lower back right wall. The saw table and circular saw were bolted to the floor of the glove box. A port for the material feed rod was made in the lower middle of the left side wall. When received, the glove box was equipped with two laboratory style gas valves which allowed ventilation of the box. These were removed and replaced with Mine Safety Appliance Company Type S filter cartridges. Air exhausted from the glove box during vacuuming was replaced by room air that was cleaned as it was drawn through these filters.

A small (Dayton 4C 549) electronics cooling fan was placed inside the glove box and operated during the material cutting portions of the experiments. The purpose of the fan was to insure that the aerosol inside the glove box was homogeneous. The adequacy of the fan was assessed by placing smoke pellets in the center of the glove box and observing the smoke dispersion patterns. It was observed that the dispersion of the smoke was complete within 5 to 10 seconds after the fan was turned on.

Fiber Generation System

The original concept of the sawing mechanism pushing a saw into a stationary piece of material was rejected for several reasons. First, it was concluded that the windings of the electric saw motor would become contaminated with asbestos fibers and would become a secondary source of fiber generation. Use of a sealed pneumatic motor was considered impractical. Second, controlling the rate of advance of the saw would have been difficult. Third, it would have been difficult to propel the bulky saw in a straight line which is necessary to minimize fiber generation by the sides of the saw blade. In short, installation of the saw in the box would have required insertion of excessive mechanical equipment in the glove box. That would have resulted in an increase in the interior surface area with a concomitant increase in the difficulty of clean-up between runs. We, therefore, chose to place the motor outside the box, drive the saw blade with a flexible shaft, and feed the material into the blade.

The secondary manufacturing operation initially simulated in the glove box was the sawing of asbestos cement sheet. The fiber generation system consisted of a circular saw, saw table, material feed mechanism,

and asbestos cement sheet. The design of the system attempted to minimize the number of components inside the box and to use off-the-shelf components to the extent possible.

A Dayton (Stock No. 4X631) portable power circular saw wheel was used. The masonry type saw wheel is commonly used for sawing concrete, tile, brick, slate, and similar materials. This type of saw is not recommended for use in cutting asbestos containing materials because it is known to create high fiber concentrations. It was chosen for these preliminary experiments because its use would insure generation of measurable fiber concentrations and because its use eliminated a possible variable - blade tooth sharpness. The saw wheel is 15.2 cm in diameter, and 0.32 cm thick. The silicon-carbide wheel is reinforced with resin-bonded fiberglass for safety. The saw is powered by a Dayton (Stock No. 6K553) 0.25 horsepower motor at 1,725 revolutions per minute. A Dayton (Stock No. 2Z325) flexible power shaft was used to rotate the saw wheel.

A small saw table (Figure 2) was fabricated to support the saw and power shaft, as well as the asbestos cement sheet. The table is 30 cm long, 13 cm wide, and 18 cm high, and is bolted to the floor of the glove box. Two spring clips and metal bar hold the materials firmly in place as it is fed to the saw.

A material feed mechanism (Figure 3) was fabricated that would push the asbestos sheet into the saw blade at a known and constant rate. The work feeder was built around a standard 26 turns per inch lathe worm gear. The worm gear was driven by a Dayton variable speed gearmotor (Stock No. 42128) and thus the work feed rate was controlled by a Dayton motor speed controller (Stock No. 6X165). An 85 cm rod was attached to the threaded block that rode on the worm gear. The end of this rod extended into the glove box through a rubber gland and clamped to the material to be sawn. It was possible to feed the material at reproducible rates of 0.1 to 30 cm/min.

The asbestos cement sheet was Transite®, a registered Johns-Manville product. The sheet was scored into 40 cm by 11 cm coupons with 0.635 cm thickness. The average composition by weight of the sheet was 35% chrysotile absestos.

The second fiber generation system used was identical to the first in every respect except that a toothed saw blade replaced the masonry blade. A Vermont American No. M46612, 6-1/2 inch blade with 40 carbide tipped teeth was used. The blade was used to cut the same Transite® sheet that was used in the first set of experiments and to cut millboard. The millboard, obtained from the Quinn-T-Corp, was their standard #E101 electrical insulation product. It was 1/4 inch thick and contained 77.5% asbestos.

The third fiber generation system was also similar to the first and second; it differed only in that the saw blade was replaced by a 6 inch x 3/4 inch Grade N, Grit 36 grinding wheel (Sears 9 64232). The material

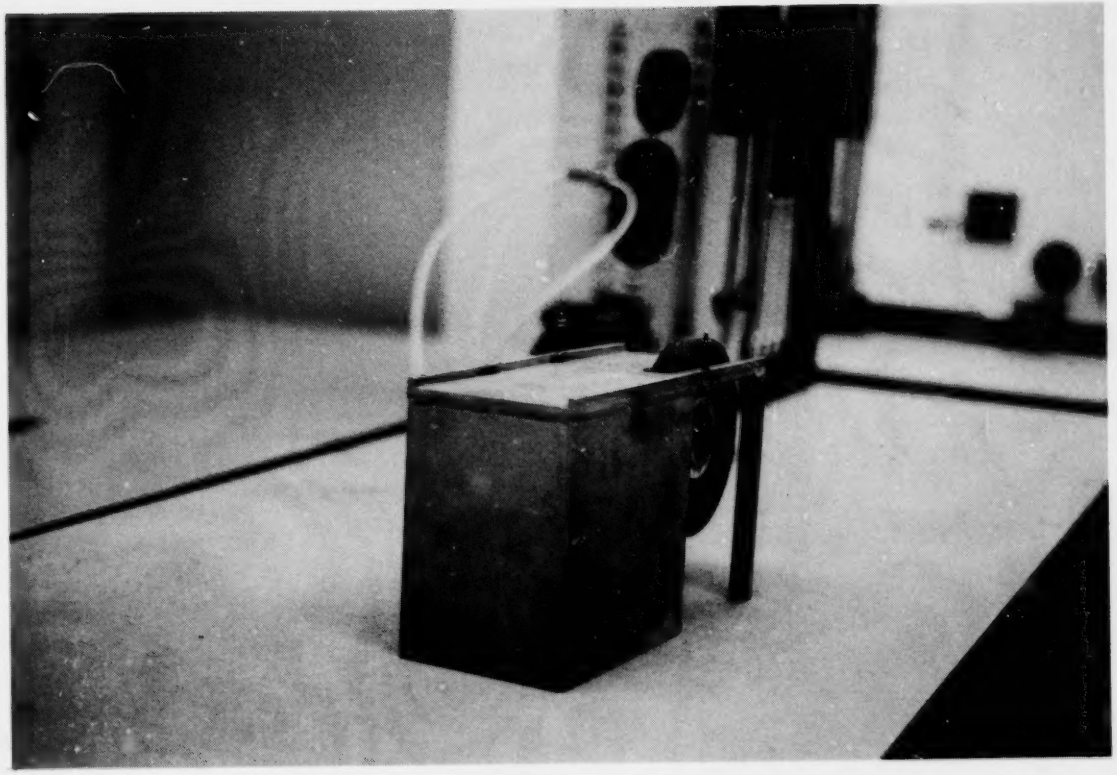

Figure 2. Sawing/grinding table.

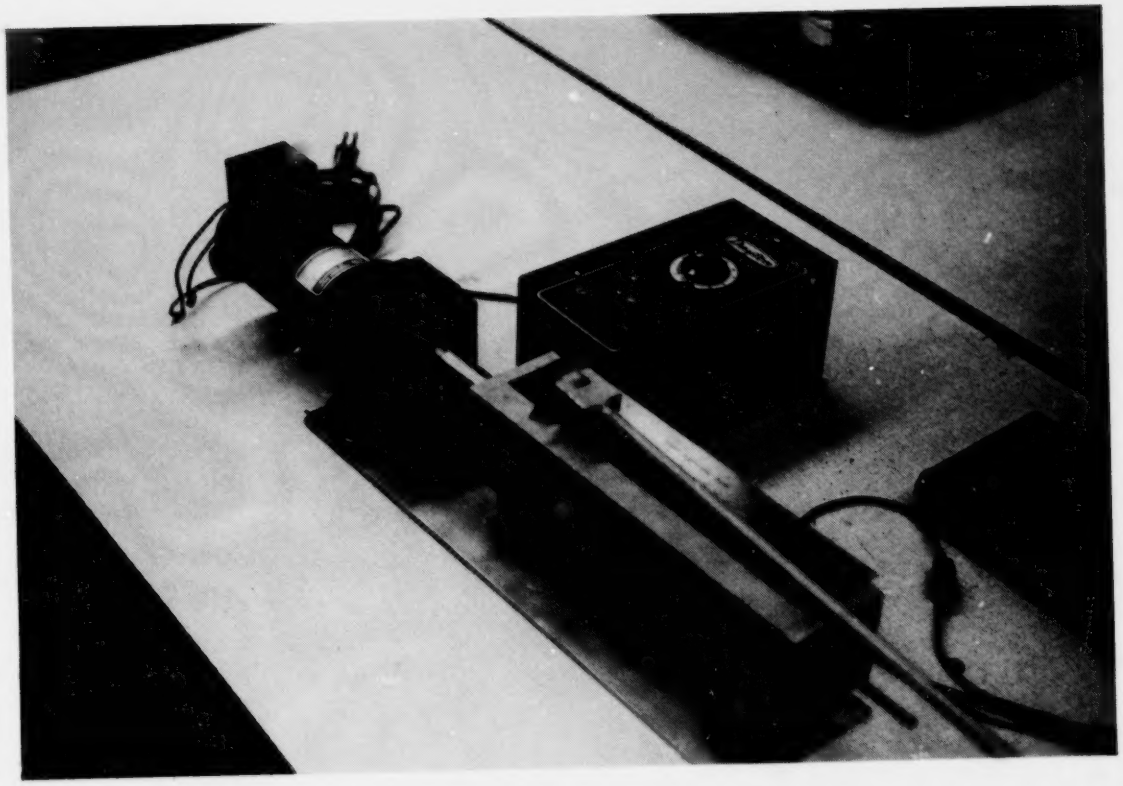

Figure 3. Material feed apparatus.

ground was Raybestos Manhattan, Inc., N 9531 brake shoe lining. This material contained 37.5% asbestos.

The fourth fiber generation system was created by replacing the saw table with two tripods (Figure 4). These were bolted to the floor of the glove box. One tripod supported the work feed mechanism shaft but allowed the shaft to be moved in and out freely. The material to be drilled was clamped to a vertical plate that was attached to the end of the work feed shaft. The hole in the center of this plate allowed the drill bit to fully penetrate the material. The flexible drive shaft was held by the second tripod. The saw arbor on the shaft was replaced by a drill chuck. Carbide tipped masonry drill bits were used in the drilling experiments. The asbestos cement sheet was drilled with a 3/8 inch diameter bit and the millboard with a 1/4 inch bit. These hole sizes have the same area as the slots that were cut in these materials during the sawing experiments. The ratio of hole sizes (and slot sizes) is approximately equal to the inverse of the ratio of asbestos content in the two materials.

Air Sampling System

Air samples were collected by passing a known volume of air through a polycarbonate membrane filter. Real time measurements of the fiber concentration inside the glove box were made using the FAM.

A Thomas vacuum pump pulled air through four independent sample lines. The samples were connected to Matheson (Model R7630 series) flowmeters that were calibrated with a bubble tube flowmeter before testing and operated at flow rate ranging from 0.3-2.2 liters/min. The pressure drop across each filter was measured by a Dwyer Slack Tube manometer (Model 1211-36). Samples were collected on 37 mm diameter Nuclepore® polycarbonate disc membranes (Stock No. 110807) with a pore hole size of 0.4 microns. The Nuclepore® filter was placed on a celluose pad for support and to distribute air flow over the entire filter surface. The filter and cellulose pad were placed in a 37 mm Millipore disposable plastic filter holder (Model MAWP 03 AO). A filter retaining ring between the top and bottom half of the filter holder permits the removal of the top halve for open faced sampling, while at the same time holding the filter firmly in place. The filters were positioned vertically, open face up, on a metal sampling head. The vacuum lines were connected to the bottom orifice of the filter holder. The sampling head was clamped to a ring stand positioned in the back of the glove box. The sampling head was positioned six inches directly above the saw blade.

Real time monitoring of asbestos fibers was conducted using the GCA Fibrous Aerosol Monitor (Model FAM-1). The FAM is designed to automatically count airborne fibers for sample times of 1, 10, 100, and 1000 minutes and display the count and resulting concentration on a digital display. Air pulled through FAM first passes through a chamber in which laminar flow is developed. The air is then drawn through the sensing region where the particles are exposed to an oscillating electric field. Fibers are counted by detecting the light scattering signature resulting

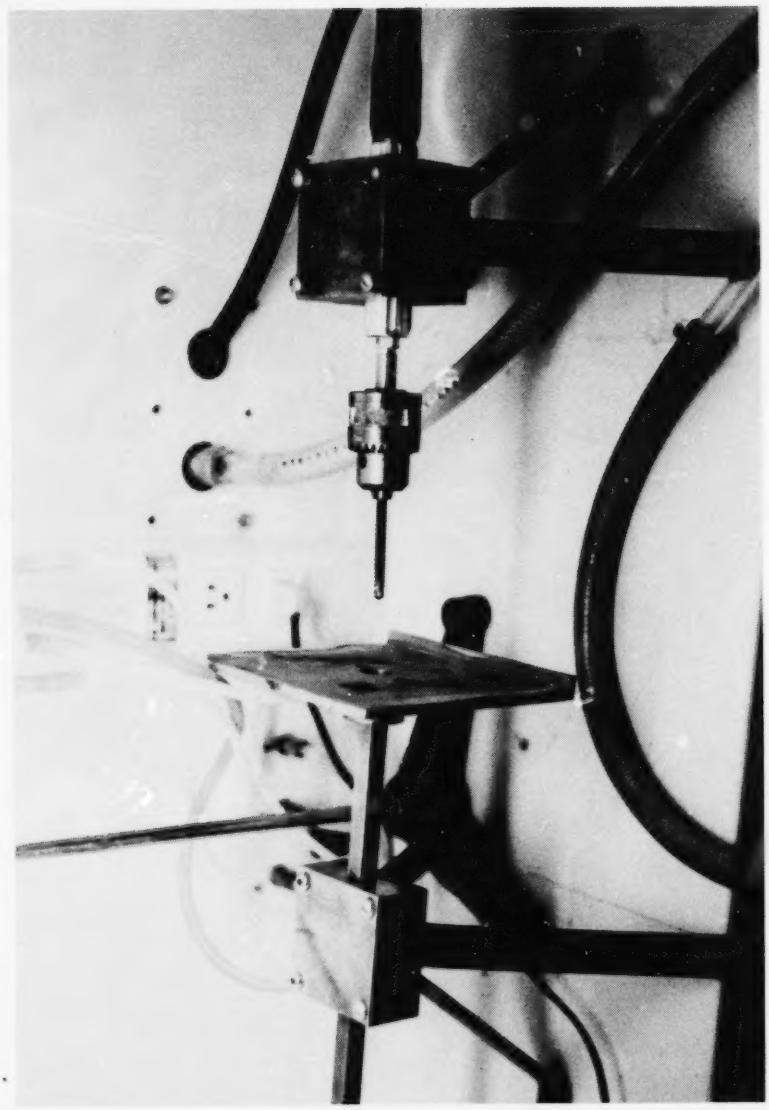

Figure 4. Drilling apparatus.

from the oscillation of the fibers while being illuminated by a helium neon laser-generated light beam. An in-line membrane filter collects the particles from the instrument exhaust to prevent contamination of room air.

Glove Box Decontamination Unit

A Dayton vacuum (Model No. 27564) and Dayton asbestos filtering system (Model No. 6X724) were used to decontaminate the glove box. The vacuum line runs from the glove box to the vacuum unit and filtering system, which was located outside the building. The vacuum is rated at about 90 cubic feet per minute. The asbestos filter system meets OSHA standards for vacuuming asbestos, and consists of a HEPA cartridge filter to back up the primary collection bag. The decontamination unit was designed to remove asbestos in the box without contaminating room air during the cleaning cycle.

Disposable polyvinyl gloves were used to transfer used asbestos cement sheet from the glove box to sealed plastic bags. Whenever the glove box was opened for washing, a personal respirator with a NIOSH approved filter cartridge was worn in addition to the disposable gloves. Disposable towels were placed in sealed plastic bags after use in washing the glove box interior.

Carbon Coating Unit

Carbon coating of the polycarbonate filters was performed using a Thermionics (Model TL1-10) Vacuum Evaporator rented from the Department of Anatomy of the George Washington University in Washington, D.C. ES personnel were trained to perform the carbon coating procedure.

Transmission Electron Microscope

Fiber counting and sizing was performed using IITRI's 100 KV transmission electron microscope (TEM). The filters were prepared in a clean room adjacent to the TEM room. The filters were transferred to an EM grid, and the filter was dissolved in a modified Jaffe Wick Washer. The EM grid was viewed under a fluorescent viewing screen inscribed with graduations to estimate the length and width of fibrous particles. More detailed information on the TEM can be found in Reference 1.

LABORATORY PROCEDURES

The laboratory procedures for generating and measuring airborne asbestos consist of:

- Sample preparation
- Fiber generation
- Sample collection
- Glove box decontamination
- Carbon coating

- o Transfer to EM grid
- o TEM examination and data collection

The first five tasks were performed by ES, while the last two tasks were performed by IITRI. The description of the procedures performed at IITRI was extracted from Reference 1.

Sample Preparation

Air samples were taken on 37-mm diameters, 0.4-micron pore size polycarbonate filters. The shiny, smooth side was used as the particle capture surface. The filter was supported by a cellulose pad in a 37-mm plastic filter holder. A piece of tape, which also served as a label, was placed on the filter cartridge so that it formed an air tight seal between the bottom half and middle ring of the plastic filter holder. The label insured that air did not enter through the sides of the unit. The label listed the date, ES project number (8401), and filter identification number. The filter ID number was a seven digit code, the first three digits were the run number, the next was a letter specifying the location on the sampling head, and the final three digits were a filter identification number.

Prior to each experimental run, a data sheet was prepared similar to Figure 5. The sequential run number, beginning with 101, was recorded along with the time and date of the run. A battery powered wet bulb/dry bulb thermometer was used to measure the temperatures inside the glove box and the room temperatures. Atmospheric pressure was also recorded.

Before each run, the FAM was used to test the fiber concentration inside the glove box. A ten minute average concentration of less than 0.10 f/cc indicated that the glove box was sufficiently clean to proceed with the run. If the FAM reading exceeded 0.10 f/cc, then the run was postponed until the glove box had been revacuumed and/or washed, and retested with the FAM.

Once the FAM indicated that the glove box was clean enough to proceed, the plastic filter holders were placed in the metal sampling head, the plastic filter tops were removed, and the top of the metal sampling head replaced to protect the open face filters. The sampling head is clamped to the ringstand in the glove box so that the bottom of the sampling head was six inches above the sawblade. The sample lines were connected and the plastic filter holder tops were placed in the air interchange chamber. The glove box was locked and the system was ready for a run.

Fiber Generation

For the initial set of runs, the sawing of asbestos cement sheet was the method for the generation of fibers. The asbestos cement sheet was fed into the saw wheel at a constant rate by a variable speed motor. The length of material cut and the time required for the cut were recorded on the data sheet. Prior to the cut, the fan in the front left corner of

ENGINEERING-SCIENCE
EPA ASBESTOS RELEASE PROJECT
SAMPLING AND SHIPPING RECORD

Run #: 153 Dry Bulb T: Glove Box 70.6 °F Room 70.5 °F
Date: 4/27/82 Wet Bulb T: Glove Box 62.2 " Room 62.0 "
Time: 1000 - 1145 Pressure: 29.95 in Hg
Cut Length: Start 9 3/16 Stop 8 7/16 Length of Cut 1 1/16 in.
Cut Time: Start 0:00 Stop 0:30 Elapsed Time 30 sec
Operation/Material: Sawing AC sheet
Location of Sampler: 6 inches above sawblade

Flow Rate Readings

Filter ID	Rotameter Settings (Glass Float)	Pressure Drop	Wait Time	Sample Time
170 A	30 mm	1.8 in. H_2O	600 sec	600 sec
171 B	64 mm	12.8 in. H_2O	600 sec	600 sec
172 C	98 mm	15.7 in. H_2O	600 sec	600 sec
173 D	0 mm	0 in. H_2O	600 sec	0 sec

FAM Readings

Before Cut	0.04	Sampling Time	10 min
During Cut	overload	Sampling Time	10 min
After Cut	3.78	Sampling Time	10 min
After Cut	2.64	Sampling Time	10 min
After Cut		Sampling Time	

Operator Edward J Sabo

	Initials	Date	Time	Filter ID
Coated by:	ejs	5/7/82	11 AM	171 173
Shipped to:	ejs	5/7/82	5 PM	171 173

Shipping Method: FED EX Airbill No.: 423657861

Remarks (initial and date): Room air FAM Reading = 0.05 for a 10 minute average.
Ratio = 0.5

Figure 5. Sample laboratory data sheet.

the glove box was switched on to circulate the air inside the box during the cut. The fan operated during the cut, but was switched off at the end of the cut because large cement particles from the bottom of the box were reentrained if the fan were left on.

The theoretical settling rate data are in close agreement with actual settling data obtained under working conditions. Fibers 1 to 5 microns in length with an aspect ratio of roughly 5:1 are a common material dispersed from overhead insulation in buildings. The settling velocities for fibers 5, 2, and 1 microns in length with a 5:1 aspect ratio and with an axis attitude varying between vertical and horizontal would be approximately 2×10^{-2}, 4×10^{-3}, and 1×10^{-3} cm/sec, respectively. The theoretical times needed for such fibers to settle from a 3 meter (9 feet) ceiling are 4, 20, and 80 hours in still air. Turbulence will prolong their suspension.

The observations made above led to the standardization of mixing within the test chamber and adoption of a 10-minute waiting period between the end of the mechanical operation on the material and the sampling of the aerosol. The former is to standarized the suspension times of the fibers of interest and the latter is to allow the larger particles (>30 microns) that mask the smaller particles to settle prior to sampling. The need for the 10-minute waiting period became obvious during the early stages of the development of the method when it was observed that filter samples that were taken immediately upon cessation of sawing were coated with a thin layer of dust. Microscopic examination of these filters revealed that the dust layer was composed of relatively large particles of cement binder, particles with aerodynamic diameters larger than 30 microns. Not only did these particles mask the smaller fibers of interest, making the TEM analysis difficult and uncertain, they contributed to erratic concentration measurements since they arrived on the filter by settling rather than by sampling. Various periods of time (1-, 4-, and 10-minute) with the filters covered prior to beginning of sampling were evaluated. It was found that 10 minutes was the minimum sufficient time required to allow the larger particles to settle from the aerosol and thereby eliminate this interference. This phenomenon was confirmed by another investigator who observed during the course of experiments, in a room-sized chamber, that it was necessary to wait 15 minutes after the cessation of machining before beginning sampling in order to obtain reproducible results.

Sample Collection

During the sawing period, the filters were positioned in the sampling head and covered with the top of the sampling head. After the cut was completed, the filters remained covered for a period of ten minutes to allow larger particles to settle out. After the ten minute wait period, the sampling head cover was removed, the sampling pump and FAM switched on, and a ten minute sample drawn through the polycarbonate filters and FAM. The rotameter settings were preset to provide flow rates of about 0, 0.5, 1.0, and 1.75 liters/min. No air was drawn through one of the filters so that the effect of particles settling onto the filters or contamination

during handling could be determined. The rotameter settings, pressure drop across the polycarbonate filters, particle settling wait time, sample collection time, and FAM readings were recorded on the data sheet. The sampling pump was switched off after ten minutes, the inside interlock door opened, the plastic filter holder tops placed on the filter holders, and the filters holders placed in the interlock chamber. Then the inside interlock door was closed and the glove box was ready for cleaning. The outside interlock door was then opened, the filter holders removed with polyvinyl gloves, and the filter holders removed. The filter holders were stored horizontally until transport to the carbon coater.

Glove Box Decontamination

Immediately after the filters were removed from the glove box, the glove box was thoroughly vacuumed, including the floor, saw table, side walls, ring stand, fan, and rubber gloves. Makeup air was pulled through the NIOSH approved filter cartridges mounted on the side of the box. The vacuuming took about ten minutes. A ten minute sample was then taken with the FAM to determine if the box was sufficiently clean to proceed with another experiment. The criterion of a FAM reading of less than 0.10 f/cc for a ten minute average was selected for the indication of a clean glove box. If the FAM reading exceeded 0.10 f/cc, the glove box was revacuumed and/or washed using water, paper towels, disposable gloves. A respirator was worn during all these operations.

Carbon Coating

The carbon coating of the polycarbonate filters was performed at the George Washington University, about ten miles from the ES laboratory. The polycarbonate filters remained in the plastic filter holder at all times, so there was no handling of the filters prior to the application of the carbon film to the filter.

The plastic filter holder was placed on a mount about 10 cm below the carbon electrodes. The pointed end of one electrode, the neck of which was 0.1 cm in diameter and 0.5 cm long, rested against the flat surface of the other electrode. The bell jar of the evaporator was pumped down for a period of three minutes to obtain a vacuum of about 1×10^{-4} torr. The plastic filter holder was rotated while the electrode current was increased to about 15 amperes for a period of 10 seconds. The amperage was dropped to zero for about one minute, then raised to 25-30 amperes for a period of 25-30 seconds. The evaporation of the electrode neck continued in 30 second segments until about three-fourths of the neck was evaporated. The plastic filter holder was continually rotated during evaporation so that particles were evenly coated on all sides and undesirable shadows eliminated. After the electrode neck was evaporated, the bell jar was returned to atmospheric pressure, the filter holders removed and placed in a small box for overnight delivery to IITRI by a small parcel delivery service.

Transfer to Em Grid

At IITRI, the collected particles from the carbon coated polycarbonate filter were transferred to an electron microscope grid. The transfer was accomplished in a modified Jaffe Wick Washer. Briefly, the Jaffe Wick Washer is a petri dish containing a substrate to support the EM grid and carbon coated polycarbonate filter. Solvent is added to cause dissolution of the polycarbonate membrane with a minimum loss or dislocation with of the particles. The result is a membrane free EM grid with particles embedded in the carbon coating. More detail on the Jaffe Wick Washer can be found in Reference 1.

TEM Examination

The EM grid was examined in the TEM at a magnification of 250X to assess the quality of the EM grid. The grid was rejected if the carbon film over most of the grids was damaged or if the specimen was dark due to incomplete dissolution of the polycarbonate filter. At a magnification of 1000X, the particle loading is assessed. The grid is rejected if the particle loading were too light (unless a blank) or too heavy (particle-particle interaction or overlap). If the grid were accepted, a field of view or grid opening was defined and measured at 1000X. The selection of the grid opening was done on a random basis. At the film magnification of 20,000X, a series of parallel traverses were made across the grid opening until the entire grid opening was scanned. Asbestos structures were identified morphologically and counted as they were scanned.

Since asbestos fibers were found isolated as well as with each other or with other particles in varying configurations, the fibrous particles were characterized as asbestos structures of the following types:

- A fiber was defined as a particle with an aspect ratio of 3:1 or greater with substantially parallel sides.
- A bundle was a particle composed of fibers in a parallel arrangement with each fiber closer than one fiber diameter.
- A cluster was a particle with fibers in a random arrangement such that all fibers were intermixed and no single fiber was isolated from the group.
- A matrix was a fiber or fibers with one end free and the other end embedded or hidden by a particle.

Figure 6 demonstrates the different types of asbestos structures.

The asbestos fiber count was given in terms of the number of asbestos structures that were identified. Thus, a cluster counted as one asbestos structure, even though there were numerous individual fibers comprising the cluster. Similarly, a bundle counted as one asbestos structure, even

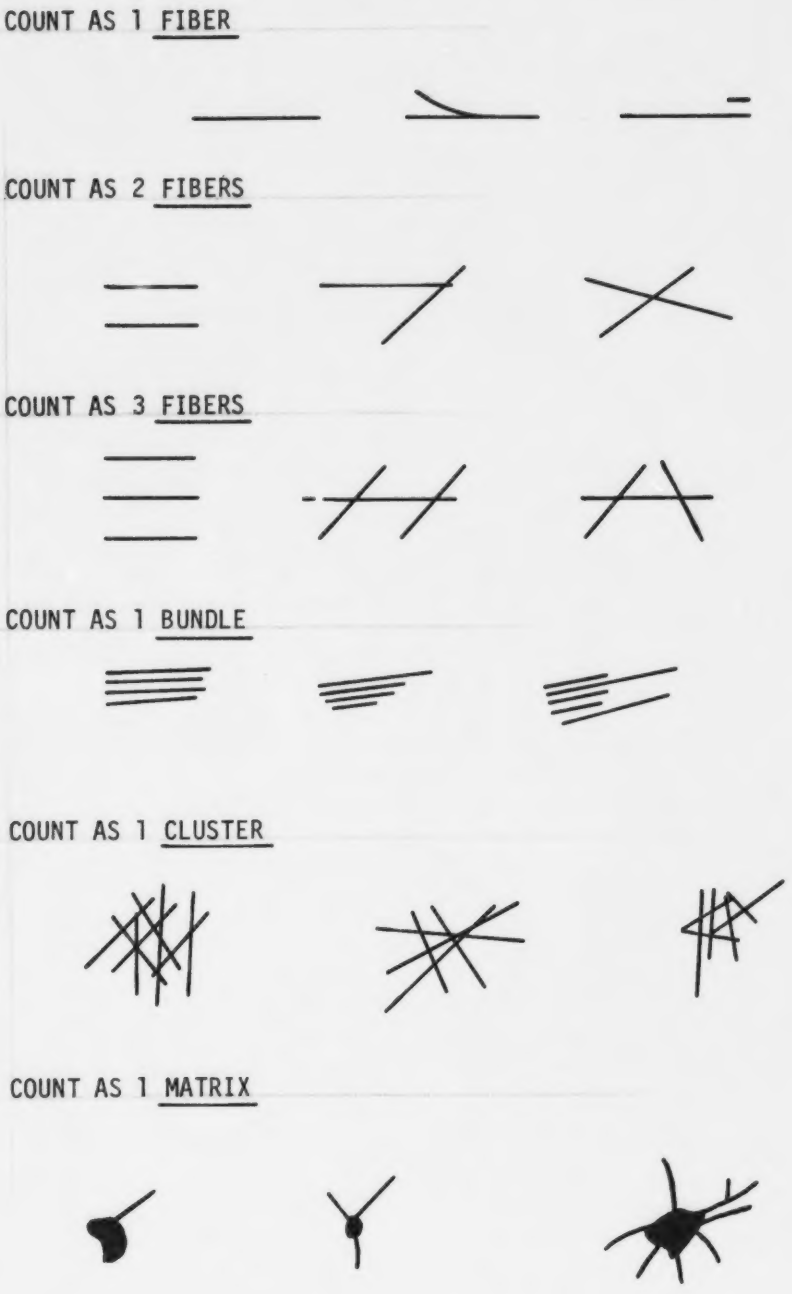

Figure 6. Types of asbestos structures.

though the bundle was comprised of several (though not always distinguishable) fibers.

Width and length measurements were obtained for individual fibers, and a cylindrical shape was assumed for volume calculations. Bundles and clusters were sized by estimating their width and length. A summation of individual diameters was used to obtain total width and an average length for the total length. A laminar sheet shape was assumed with the average diameter of the individual fiber as the thickness. Matrices were sized by summation of the best estimate of individual fiber components. A laminar or sheet structure was assumed for volume calculation.

The selected area electron diffraction (SAED) pattern was obtained for the fiber portion of each structure by use of the field limiting aperture. Electron diffraction patterns from single fibers of asbestos minerals fall into distinct groups. Transmission electron micrographs and SAED patterns obtained with standard samples were used as guides to fiber identification. From the visual examination of the electron diffraction pattern, the structure was classified as belonging to one of the following categories:

- Chrysotile
- Amphibole group
- Ambiguous
- No identification

There are several reasons for the absence of a recognizable diffraction pattern for some fibers. A few reasons include contamination of the fiber, interference from nearby particles, too small a fiber, or too thick a fiber.

Asbestos structure identification continued until the total number of structures counted exceeded 100, or a minimum of 10 grid openings were scanned, whichever came first. The TEM data were recorded by the microscopist on a data form which includes sample information, instrument parameters, and sequence of operations. Figure 7 is an example of the TEM data sheet.

DATA REDUCTION

The basic quantities to be calculated are air flow rate, fiber number concentration, and fiber mass concentration.

Some means for assuring comparability among diverse M/O combinations was needed. This was done by weighing the material before and after each experiment to determine the amount of material actually machined. These weights were measured on a laboratory balance having a 160 gram capacity and a sensitivity of 0.1 mg. The weight loss, together with the percent asbestos (as per phase contrast microscope and x-ray fluorescence analysis) in the material provide a factor by which the results were normalized. This factor was merely the mass of asbestos machined from the piece of

Sample No. C06470-5-4A1 | Acc. Voltage 100 KV | Date 8/5/81
Filter Type Nuclepore | Beam Current 100 μA | Grid Box B
Filter Area 9.62 cm² | Magnification 20,000 X | Grid Location C-5
Grid Opening Area .0001725 cm² | Comments

GO	Struct. #	Struct.	Dimension Width	Dimension Length	SAED Observation Chrys	Amph	Ambig	No-ID
1	1	F	1	33	✓			
	2	F	1	19	✓			
	3	F	1	20	✓			
	4	F	1	7			✓	
	5	M	1	9	✓			
	6	B	2	11	✓			
2	7	F	4	20			✓	
	8	F	1	10	✓			
	9	F	1	14	✓			
	10	M	1	6	✓			
	11	M	1	56	✓			
	12	M	1	25	✓			
	13	M	1	23	✓			
	14	M	1	7			✓	
	15	M	2	12	✓			
	16	F	1	13	✓			
	17	M	1	6	✓			
3	18	M	1	13				✓
	19	M	1	19			✓	
	20	F	1	17	✓			
	21	M	1	34			✓	
	22	M	1	15			✓	
	23	M	1	15			✓	
4	24	F	1	7				✓
	25	M	3	13	✓			
4	26	M	1	7	✓			
	27	F	1	16				✓
	28	F	1	7	✓			
	29	M	1	26	✓			
	30	M	1	10			✓	
	31	F	1	11				✓
5	32	M	1	41	✓			
	33	B	4	22	✓			
	34	M	1	6	✓			
	35	M	1	6			✓	
	36	M	1	13	✓			
	37	M	1	17				
	38	F	1	29				
	39	M	1	10				
6	40	F	1	24				
	41	B	4	205	✓			
	42	F	5	15		✓		
	43	F	1	11	✓			
	44	F	1	17	✓			
7	45	M	1	9	✓			
	46	F	1	20			✓	
	47	F	1	15	✓			
	48	F	1	13	✓			
	49	F	1	9				✓
	50	F	1	41	✓			

Figure 7. Sample TEM data sheet.

material. The concentration of asbestos fiber measured was divided by the mass of asbestos machined so that the units of the concentration measured were:

$$\frac{\text{Fibers/cc}}{\text{(Gram Milled)(Fraction of Asbestos)}}$$

The mass of asbestos removed from each product by each operation were held constant so that the sawing, drilling, and sanding experiments have a common basis. The fiber concentrations in the aerosol generated during these experiments are then a true release potential index. In addition, a normalization on the volume of material milled will be developed. Other factors affecting worker exposure, such as the length of time of his operation on a material, the mass of asbestos machined away during the operation, and the effectiveness of any control devices can be tested later so that the index values can be used to project potential exposures.

Air Flow Rate

The air flow rate passing through the polycarbonate filter during sampling was determined from the rotameter setting and the rotameter calibration curve. This flow rate was converted to standard conditions using the following equation:

$$Q_s = Q \left(\left(P_a - \frac{Pd}{13.6} \right) \frac{530}{29.92 \times T} \right)^{1/2}$$

where: Q_s = flow rate (cc/min) converted to standard conditions
Q = flow rate (cc/min) from rotameter calibration curve
P_a = atmosphere pressure (in. Hg)
P_d = pressure drop across filter (in. H_2O)
T = glove box temperature (°R)

The sample volume was obtained by multiplying the standard flow rate and the sample time.

Fiber Number Concentration

The asbestos structure number concentration was calculated using:

$$C_n = \frac{\frac{N}{Ng} \times \frac{Af}{Ag}}{V}$$

where: C_n = asbestos structure number concentration (number/cc)
N = asbestos structure count (number)
Ng = number of grid openings examined
A_f = total effective filter area (cm^2)
Ag = area of EM grid opening (cm^2)
V = volume of air sampled (cc)

The number concentration can either be calculated for isolated fibers only, or all asbestos structures.

Fiber Mass Concentration

The asbestos fiber mass concentration was estimated from the size measurements of the structures, the density of the asbestos and the sample volume. The fiber mass for both chrysotile and amphiboles was calculated assuming the individual fiber had a circular cross-section (cylindrical shape) and that the width measurement was the diameter. The density of chrysotile was assumed to be 2.6 g/cm^3 and of amphibole to be 3.0 g/cm^3. The individual fiber mass is calculated for each type of asbestos from the following equation:

$$M_f = 3.14\ (L)\left(\frac{D^2}{4}\right)(\rho)\ \times 10^{-6}$$

where: M_f = mass of individual fiber (µg)
L = fiber length (µm)
D = fiber diameter (µm)
ρ = fiber density (g/cm^3)

The individual mass of bundles, clusters, and matrices was calculated by assuming a laminar or sheet like structure with an average thickness of the fiber makeup of the structure. The individual mass was calculated from:

$$M_s = (L)(W)(T)(\rho) \times 10^{-6}$$

where: M_s = mass of individual asbestos structure (µg)
L = fiber length (µm)
W = fiber width (µm)
T = fiber thickness (µm)
ρ = density of fiber (g/cm^3)

The total asbestos mass was calculated for each type of asbestos by summing the individual structure masses. The mass concentration was then obtained from:

$$C_m = \frac{\frac{M + M_s}{Ng} \times \frac{A_f}{Ag}}{V}$$

where: C_m = total asbestos fiber mass concentration (µg/cc)
M = sum of individual fiber masses (µg)
M_s = sum of individual structure masses (µg)
Ng = number of grid openings examined
A_f = effective area of the filter (cm^2)
Ag = area or EM grid opening (cm^2)
V = volume of air sampled (cc)

Other characterizing parameters of the asbestos structures are:

- o Length and width distribution of fibers
- o Aspect ratio distribution of fibers
- o Fiber, bundle, cluster, matrix relationship

The acquired data and their subsequent reduction was maintained on a computer file.

Weight of Material Machined

Appropriately sized coupons of the various materials to be machined were desiccated in a constant humidity room (50% RH) for at least 24 hours prior to their use. Their initial mass was measured on a Mettler H-10 torsion balance. They were weighed again (after 24 hours desiccation) after the experiment. Because all of the materials tested were prone to increase weight by absorption of moisture from the more moist air outside of the balance room, a blank coupon was weighed and handled in exactly the same manner as the experimental coupon. It was placed inside the glove box along with the experimental coupon and re-weighed with it. The weight of material machined was calculated using:

$$\text{Weight Cut} = [IC - IC\ (\frac{IB - FB}{FB})] - FC$$

where: IC = initial weight of experimental coupon
IB = initial weight of blank coupon
FB = final weight of blank coupon
FC = final weight of experimental coupon

PERSONNEL PROTECTION

At the conclusion of each experimental run the operator removed the filters from the main glove box chamber and placed them into the smaller chamber. This smaller chamber (0.01 m^3) was sealed off from the contaminated larger chamber during the experiment. During removal of the filters from the smaller compartment, and during his subsequent vacuuming of the larger chamber, the worker wore a mask (MSA-Type S filter or equivalent) for his protection from fugitive particles. The air in the room was tested for fibers periodically with the Fibrous Aerosol Monitor (FAM).

The large chamber was opened only after completion of a second vacuuming (in addition to the cleaning that occurred after each run), and after confirmation, by the FAM, that it contained no suspended fibers.

SECTION 5

EXPERIMENTAL RESULTS

The experimental design at this study has been based upon achieving the following objectives:

- Determining the precision of the entire fiber release analytical system (comprised of fiber generation system, air sampling system, carbon coating unit, and transmission electron microscope (TEM) particle counting methods).
- Comparing TEM results to phase contrast microscope (PCM) results.
- Collecting data for a fiber release potential index.

The first of these objectives is of primary concern because determination of the precision of the analytical system must precede all subsequent efforts to evaluate asbestos containing products in the laboratory. The second objective is important because broad application of the method for testing will require knowledge of how the methods may be compared. Collecting data for the fiber release potential index was done to determine if the resulting values were significantly different and if the various experimental parameters could be measured accurately.

Approximately 20 preliminary tests were conducted in Phase I of the project to establish the values for several of the test variables. After these values were established and it was determined that fiber loading tests results could be repeated. Pase II consisted of nine reproducibility tests, using the cut-off wheel on asbestos cement sheet to establish the transmission electron microscope (TEM) sampling and analysis procedures. Phase III, consisting of five material/operation tests of eight runs each, was designed to determine whether a fiber release potential index could be developed and if so, what were the range of values. During this effort, two additional tests were run to determine the effect of inverting the sample filters. In addition, two tests were run with the filters located at the top and bottom of the glove box to determine if there was stratification of the fibers. A test matrix of the three phases of the project is as follows:

Phase	Desription	No. of Tests	Operation	Material	Analysis
I	Preliminary Experiments	20	Cut off wheel	Asbestos Cement Sheet	Gravimetric & SEM

Phase	Desription	No. of Tests	Operation	Material	Analysis
II	Reproducibility Tests	9	Cut off wheel	Asbestos Cement Sheet	TEM
III	Fiber Environmental Release Index Tests	8	Sawing	Asbestos Cement Sheet	TEM
	• Inverted Samples	2	Sawing	Asbestos Cement Sheet	TEM
	• Stratification Tests	2	Sawing	Asbestos Cement Sheet	TEM
III	Fiber Environmental Release Index Tests	8	Sawing	Millboard	TEM, PCM
III	Fiber Environmental Release Index Tests	8	Grinding	Brake Lining	TEM, PCM
III	Fiber Environmental Release Index Tests	8	Drilling	Asbestos Cement Sheet	TEM, PCM
III	Fiber Environmental Release Index Tests	8	Drilling	Millboard	TEM, PCM

The results of all of these experiments are discussed in this Section, as are the TEM/PCM comparative results and the development of the fiber release potential index. The results are not necessarily presented in the order in which the tests were conducted, but rather in a sequence in which the scientific questions are raised.

PRELIMINARY EXPERIMENTS

The primary purpose of a series of preliminary runs was to develop a set of laboratory procedures that would obtain a representative and unbiased sample. For the purposes of the TEM particle counting analysis, a particle mass loading of 5-10 micrograms/cm^2 of filter is optimal for analysis. Loadings greater than 20-25 micrograms/cm^2 require a dilution treatment that may effect the particle size and shape distribution. Thus, before the precision testing could begin, a set of laboratory procedures

needed to be developed that would consistently provide samples with a particle loading in the range required for the TEM analysis.

Several variables in the analytical system affect the particle loading. Some of these variables are controllable, including:

- o Cut length - the length (cm) of asbestos cement sheet cut during the run.
- o Cut time - the period of time (seconds) required to cut the length of asbestos cement sheet.
- o Wait time - the period of time (seconds) after the cut is completed but before air sampling begins to allow large particles to settle. The filters are covered during this time.
- o Sample time - the period of time (seconds) during which air is drawn through the polycarbonate filter.
- o Rotameter setting - determines the approximate flow rate through the polycarbonate filter.

There are other factors that may affect the filter particle loading that are not easily controlled, such as filter contamination or particle loss during handling or transport. The preliminary runs were designed to obtain a rough idea of the effects of the controllable variables, while trying to minimize the effects of filter handling and transport.

Several techniques were used during the preliminary runs to determine the effect of variation of key parameters on obtaining a proper loading on the filters. For a relatively quick and cheap estimate, filters were weighed in the ES laboratory before and after each run to determine the mass collected on the filter. This method had the major drawback of requiring several filter handling steps, but provided order of magnitude estimates of particle loading. The second method was a scanning electron microscopy analysis that quickly determined if a filter was properly loaded for further analysis. This method required carbon coating each filter and sending the collected samples to the IITRI laboratory. The third method was to use the real time Fibrous Aerosol Monitor (FAM) to obtain an approximate particle loading level in the glove box. The drawback of this method is that the FAM measures fiber loading and not particle loading. In addition to these three analysis techniques, several filters were analyzed under the TEM to determine the size and shape distribution of the collected particles. The results of each of these analyses are discussed in the following paragraphs.

Before any of the above analyses were conducted, the values for the flow rates and sample times were assigned. Flow rates for 37-mm filters are recommended in Reference 3 to be approximately 0.5-2.5 liters/minute. Flow rates were set at 0.5, 1.25, and 2.0 liters per minute in order to

bracket the particle loading so that at least one filter would be directly usable for TEM analysis. Sample times were set at ten minutes, since longer sample times would begin to introduce the problem of dilution within the glove box, while shorter sample times might not have produced a representative sample. The air sampling parameters were defined before any experiments were made so that the proper particle loading could be obtained by varying the fiber generation parameters (cut length, cut time, wait time).

Gravimetric Analysis

Several runs were made and the filters were weighed to determine approximately the amount of particulate matter collected on each filter. The ideal particulate matter loading for TEM analysis is 5-10 micrograms/cm^2 of exposed filter area. Table 1 summarizes the important parameters of these runs. The last column in the table represents the average of the mass collected on four different filters at four different flow rates during the run, divided by the exposed filter area.

Runs 116 and 118 had short cut times and different wait times during which the filters were covered. The average mass collected per unit area of filter was significantly lower for Run 116, with a long wait time, than for Run 118 with a short wait time. During the ten minute wait period of Run 116, a light coating of particles settled and were visible on the top of the sampling head cover. Since these particles were visible, it is probable that they are greater than 50 microns and therefore not respirable.

Runs 124, 126, and 128 tested the effect of varying the wait period. The runs were conducted in an identical manner except for the differing wait times. There was not much difference in the average mass collected per unit filter area for the one minute and four minute wait times, but was significantly less for the ten minute wait period. These results indicate that a long wait period, on the order of ten minutes is necessary to allow large particles to settle.

The results of the gravimetric analysis indicated that the best operating conditions for producing the desired particle loading were a cut length of about 3 cm, a cut time of 60 seconds, and a wait time of 600 seconds. SEM and FAM analysis were performed subsequently to confirm these results and to better define the optimum operating conditions.

SEM and FAM Analysis

Five runs were made and the filters were carbon coated for analysis under the scanning electron microscope. An experienced microscopist can determine if a filter has the proper particle loading for the TEM analysis by examining the filter under the SEM. The results of this examination are shown in Table 2. The five runs were made with a wait period of ten minutes and varying cut lengths to determine if the amount of material cut had an effect on the particle loading. Run 136 had a cut length of 5.5 cm

TABLE 1. SUMMARY OF GRAVIMETRIC ANALYSIS

Run Number	Cut Length (cm)	Cut Time (sec)	Feed Rate (cm/min)	Wait Time (sec)	Average Mass Collected Per Unit Area of Filter ($\mu g/cm^2$)
107	19.4	450	2.6	60	55
111	4.8	600	0.5	60	26
113	6.5	600	0.7	60	21
116	2.9	60	2.9	600	6
118	3.0	60	3.0	60	33
124	5.9	60	5.9	60	77
126	5.4	60	5.4	240	66
128	5.2	60	5.2	600	23

TABLE 2. SUMMARY OF SEM ANALYSIS

Run Number	Cut Length (cm)	Cut Time (sec)	Feed Rate (cm/min)	Wait Time (sec)	FAM Reading (f/cc)	Comment
136	5.5	60	5.5	600	9.75	Loading slightly heavy
137	2.9	30	5.7	600	4.54	Loading about right
138	2.9	30	5.7	600	3.49	Loading about right
139	1.6	15	6.4	600	1.49	Loading slightly light
140	1.6	15	6.4	600	1.33	Loading slightly light

and cut time of 60 seconds. After a filter from this run was examined by SEM, it was determined that the operating conditions of Run 136 produced a particle loading that was usable for a TEM analysis, although the loading was slightly on the heavy side. The cut length and time were halved in Runs 137 and 138. Filters from these two identical runs were examined under the SEM, the results being that the particle loading deposited on the filters during these runs were ideal for TEM analysis. Runs 139 and 140 had cut lengths and times that were a quarter of those in Run 136. The SEM examination showed that the loading on these filters were light, and could be doubled or tripled in order to provide a desirable loading.

Also shown in Table 2 are the FAM readings for each run. The FAM readings were taken during the same ten minute sample period as the polycarbonate filter sample. The FAM readings are highly correlated with the length of material cut, so that the FAM might be useful in this study as an approximate indicator of the loading that might be deposited on the polycarbonate filter during a ten minute sample.

TEM Analysis

Four filters from the preliminary runs were analyzed to determine the amount and type of asbestos structures collected on the polycarbonate filters. Table 3 summarizes the results of the initial TEM analysis.

The first important point shown in Table 3 is the large number of matrix type particles deposited on the filters. A matrix is a fiber or fibers with one end attached to or hidden by a non-fiber particle, which in most cases is larger than the individual fiber component. This indicates that the sawing action does not completely release all of the asbestos from the cement binder. No size measurements of the non-fiber part of the matrices were made.

The second important point in the table is the large number of chrysotile structures, which was expected since the asbestos cement sheet contains only chrysotile asbestos. Only 3.5% of the structures were positively identified as being non-asbestos. About 65% of the structures were positively identified as being chrysotile asbestos. The remaining structures did not have a recognizable electron diffraction pattern because of interference from nearby particles, the fiber was too small or thick, or the fiber was not suitably oriented for analysis. The large number of ambiguous electron diffraction patterns was due mainly to the large number of matrix structures, which interfere with the pattern identification.

The third important point in Table 3 is the asbestos number concentration. All four filters have very high asbestos fiber concentrations. There is a very rough correlation between the amount of material cut and the fiber concentration, but even the short cut lengths have a high fiber concentration. Thus, only a small amount of material needs to be cut in order to generate a high fiber concentration.

TABLE 3. SUMMARY OF INITIAL TEM ANALYSIS

Parameter	Filter Identification Number			
	107-B-028	113-A-043	116-B-054	116-C-055
Operating Conditions				
Cut Length (cm)	19.4	6.5	2.9	2.9
Cut Time (sec)	450	600	60	60
Wait Time (sec)	60	60	600	600
Sample Time (sec)	600	600	600	600
Flow Rate (l/min)	1.76	0.63	1.29	1.77
Count by Shape of Structure				
Fiber	35	55	20	38
Bundle	12	4	0	9
Cluster	7	10	0	3
Matrix	47	32	17	69
Count by Type of Asbestos				
Chrysotile	54	81	22	75
Amphibole	0	0	1	0
Ambiguous	44	16	8	40
Not Asbestos	3	2	5	3
No Pattern	0	2	1	1
Number of Grid Openings	1	4	10	3
Asbestos Fiber Concentration (f/cc)	236	259	18	85
Asbestos Structure Concentration (f/cc)	681	475	34	267

Table 4 summarizes the size characteristics of the collected asbestos structures. For matrix structures, the dimensions are for the fiber portion of the particle. Nearly all of the fibers are less than five microns in length, the average being about 1.3 microns. The average widths depend on the type of asbestos structure.

CLEANUP RUNS AND BLANKS

Several types of cleanup runs and blank runs were made in order to document that the response (the TEM analysis of the sample filters) was due to the machining of the sample coupon and not due to background or filter contamination. These tests are summarized in Table 5. The conclusion made was that if the FAM reports less than 0.1 fiber/cc that the TEM result will be less than 0.4 fibers/grid opening. Further, it appears that this is the result of low grade filter contamination. That is, the unused filters are slightly contaminated with asbestos fibers and that the experimental apparatus adds nothing to that contamination. This background is significant only in comparison to the results obtained for the drilling of millboard. The background accounts for approximately 4.0% of the total response observed during these experiments.

The question of how to account for the background counts was considered and a decision was made to ignore it. Subtracting blank values generated in association with each individual set of experiments (the last five entries in Table 5) did not seem advisable. The number of fibers on a blank appears to be a random number between 0 and 9. Making this subtraction would have unnecessarily increased the dispersion of the data. Note that using this procedure would have resulted in subtraction of 0 from the millboard drilling results and relatively small amounts from the other results. It would have had no impact on the ranking of the various product/operation experiments. Subtracting an average blank value from every experiment would have decreased each concentration value by approximately the same amount (0.2 to 4%).

EXPERIMENTAL PARAMETERS

As was mentioned in Section 4, consistency of experimental parameters (i.e., sample flow rate and valid material milled), were desired. The results of tests conducted in Phase II and III, as presented in Tables 6 and 7 demonstrate that consistency was in fact, attained. Tests 145 through 167 conducted in Phase II did not attempt to hold the flow rates constant. Beginning with Run Number 169, the A and B positions in the filter holder were occupied by Nuclepore® filters; upright in the B position, inverted in the A position. Positions C and D were occupied by Millipore filters; upright in the D position, inverted in the C position. For these tests, all Nuclepore® sample volumes were approximately 4950 cc (0.5 lpm); all Millipore® sample volumes were approximately 17,500 cc (1.7 lpm).

TABLE 4. SUMMARY OF SIZE CHARACTERISTICS

Parameter	Filter Identification Number			
	107-B-028	113-A-043	116-B-054	116-C-055
Fiber				
Average Width[a] (microns)	0.09 ± 0.04	0.09 ± 0.04	0.10 ± 0.06	0.09 ± 0.06
Average Length (microns)	1.40 ± 1.13	1.03 ± 0.83	1.08 ± 0.70	1.86 ± 1.35
Length/Width Ratio	17.3 ± 18.1	12.5 ± 8.6	13.7 ± 12.0	21.0 ± 11.8
Bundle				
Average Width (microns)	0.33 ± 0.12	0.45 ± 0.13	0	0.49 ± 0.34
Average Length (microns)	2.07 ± 1.06	5.47 ± 0.74	0	4.27 ± 1.80
Length/Width Ratio	6.8 ± 2.6	13.0 ± 4.8	0	13.0 ± 9.1
Cluster				
Average Width (microns)	0.91 ± 1.00	0.55 ± 0.70	0	0.83 ± 0.91
Average Length (microns)	2.95 ± 2.95	2.45 ± 1.34	0	1.40 ± 0.58
Length/Width Ratio	3.8 ± 1.4	7.5 ± 4.4	0	2.9 ± 1.6
Matrix				
Average Width (microns)	0.09 ± 0.10	0.10 ± 0.06	0.16 ± 0.17	0.21 ± 0.43
Average Length (microns)	0.85 ± 0.43	0.96 ± 0.64	0.83 ± 0.43	1.12 ± 0.95
Length/Width Ratio	9.7 ± 6.8	11.3 ± 9.1	7.5 ± 3.9	10.2 ± 9.2

[a] Geometric means of lengths and width are more appropriate since the particle sizes appear to be log-normally distributed. The differences between the geometric means and arithmetic averages are relatively small and do not change conclusions to the overall shapes of the various structures.

TABLE 5. SUMMARY OF BACKGROUND FIBER COUNTS AND CONCENTRATIONS

Experiment Number	Cleanup Description	Analysis: Mass — Mass Collected (µg)	Analysis: Mass — Mass Conc. (mg/m^3)	Analysis: TEM — Asbestos Fibers Counted (F)[a]	Analysis: TEM — Conc. (f/cc)	Analysis: FAM — Conc. (f/cc)
113-K-051	------[b]	0.01	NA	0.5	NA	----
115-C-052	Vacuum & Wash	0.01	0.5	0.4	2.3	----
121-A-071	Vacuum	0.01	0.5	---	---	----
122-A-072	Vacuum & Wash	0.03	1.5	---	---	----
142-B-144	Vacuum	----	---	---	---	0.00
144-B-149	Vacuum	----	---	---	---	0.04
146-B-154	Vacuum	----	---	---	---	0.01
152-B-169	Vacuum & Wash	----	---	0.6	7.1	0.09
162-B-196	Vacuum & Wash	----	---	0.4	4.3	0.00
158-B-183	Vacuum	----	---	0	0.0	0.02
158-K-185	------[b]	----	---	0.3	---	----
160-B-190	Vacuum	----	---	0.6	6.0	0.06
162-B-196	Vacuum & Wash	----	---	0.4	7.1	0.00
185-A-290	Vacuum	----	---	0.9	---	----
190-A-310	Vacuum	----	---	0.8	---	----
199-A-346	Vacuum	----	---	0.4	---	----
208-A-382	Vacuum	----	---	0	---	----

[a] Fibers per grid opening.
[b] These are reagent blanks, i.e., unexposed filters taken from the manufacturer's packaging, carbon coated then analyzed.

TABLE 6. EXPERIMENTAL PARAMETERS

Run Number	Material	Operation	Grams Material Milled	Grams Asbestos Milled	Sample Volumes (cc) Filter A	Filter B	Filter C	Filter D
145	AC Sheet	Cut-Off Wheel	0.979[a]	0.343	6,071	11,727	15,627	0
147			1.119[a]	0.392	5,887	11,813	15,231	0
149			1,040[a]	0.364	5,451	12,062	15,103	0
151			1.119[a]	0.392	5,869	11,847	14,119	0
153			1,186[a]	0.415	6,096	12,513	17,315	0
155			1.119[a]	0.392	6,118	12,858	17,601	0
157			1.189[a]	0.416	5,896	12,664	17,426	0
159			1.119[a]	0.392	5,468	12,797	16,975	0
161			1.119[a]	0.392	5,461	12,705	17,117	0
165	AC Sheet	Saw	1.293[a]	0.453	4,513	4,956	4,730	4,951
167			1.003[a]	0.351	4,677	4,937	4,923	4,936
HiLo-1			1.085	0.380	4,984	4,981	4,970	4,977
HiLo-2			1.109	0.388	4,950	4,949	4,931	4,946
169			1.076	0.376	4,950	4,946	17,607	17,624
170			0.693	0.243	4,949	4,947	17,590	17,627
171			1.312	0.459	4,963	4,954	17,640	17,656
172			0.967	0.338	4,961	4,958	17,590	17,662
173			1.041	0.364	4,949	4,950	17,559	17,608
174			1.143	0.400	4,933	4,925	17,521	17,581
175			1.038	0.363	4,964	4,958	17,597	17,646
176			1.078	0.377	4,956	4,954	17,580	17,591
177	Millboard	Saw	0.563	0.436	4,908	4,908	17,507	17,460
178			0.441	0.342	4,941	4,933	17,617	17,601
179			0.691	0.535	4,919	4,913	17,558	17,516
180			0.606	0.469	4,915	4,906	17,318	17,502
181			0.091	0.535	4,921	4,910	17,437	17,505
182			0.622	0.482	4,922	4,917	17,479	17,485
183			0.669	0.518	4,940	4,933	17,594	17,540
184			0.700	0.543	4,912	4,902	17,444	17,484

(Continued)

TABLE 6. CONTINUED

Run Number	Material	Operation	Grams Material Milled	Grams Asbestos Milled	Sample Volumes (cc) Filter A	Filter B	Filter C	Filter D
186	Brakes	Grind	1.310	0.491	4,925	4,917	17,512	17,555
187			1.267	0.475	4,918	4,914	17,471	17,493
188			0.654	0.245	4,924	4,915	17,474	17,505
189			1.503	0.564	4,920	4,912	17,474	17,496
191			1.077	0.404	4,939	4,937	17,554	17,576
192			1.118	0.419	4,938	4,935	17,539	17,587
193			0.502	0.118	4,043	4,940	17,549	17,582
194			1.226	0.460	4,931	4,931	17,516	17,547
195	AC Sheet	Drill	1.107	0.387	4,955	4,951	17,624	17,618
196			1.029	0.360	4,971	4,965	17,656	17,676
197			0.998	0.349	4,951	4,953	17,596	17,618
198			1.008	0.353	4,951	4,953	17,596	17,615
200			1.017	0.356	4,952	4,950	17,584	17,630
201			1.054	0.369	4,949	4,953	17,585	17,607
202			1.014	0.355	4,961	4,961	17,616	17,676
203			1.007	0.352	4,954	4,953	17,613	17,648
204	Millboard	Drill	0.238	0.184	4,953	4,953	17,592	17,625
205			0.259	0.201	4,950	4,948	17,592	17,649
206			0.210	0.163	4,956	4,959	17,664	17,681
207			0.293	0.227	4,955	4,954	17,601	17,627
209			0.275	0.213	4,946	4,939	17,563	17,588
210			0.297	0.230	4,950	4,948	17,582	17,600
211			0.254	0.197	4,930	4,928	17,510	17,528
212			0.221	0.171	4,951	4,949	17,574	17,603

[a] Mass of material milled was calculated from volume of material milled and the density of the material.

TABLE 7. MASS OF ASBESTOS MILLED DURING THE VARIOUS MATERIAL/OPERATION EXPERIMENTS

Material/ Operation	Number of Runs	Average Mass Asbestos Milled (gm)	Standard Deviation (gm)	Relative Standard[a] Deviation (%)
AC Sheet Cut-Off Wheel	9	0.389	0.023	5.9
AC Sheet Saw	12	0.374	0.055	14.8
Millboard Saw	8	0.483	0.068	14.1
Brakes Grind	8	0.397	0.146	36.7
AC Sheet Drill	8	0.360	0.012	3.3
Millboard Drill	8	0.198	0.025	12.4
Overall	53	0.368	0.105	28.5

[a] Relative Standard Deviation = $\frac{\text{std dev}}{\text{mean}} \times 100$

The grams of material milled during all the tests conducted in Phase II and III varied from material to material because the asbestos content varied. The grams of asbestos milled was held constant, however (Table 7). The amount of asbestos drilled from the millboard was approximately half the amount milled from the other materials by the other operations. This was because the millboard tended to form a sizable flashing around the edge of the back of the hole. The amount of material ground from the brake shoes varied more than we would have liked; this was a difficult operation to control.

PARTICLE STRATIFICATION TESTS

Early in the development of the experimental procedure the mixing inside the glove box was assessed qualitatively by observing the dispersion of smoke released within the box. The observation was made that the small electronics cooling fan provided adequate mixing. Two runs (H/L-1 and H/L-2) were done to quantify this observation. Two pairs of filters were exposed during each of these tests, each pair consisted of one upright and one inverted filter. One pair of filters was located at the standard sampling location (approximately six inches above the operation) during each test. The second pair was located five inches above this location during Run No. H/L-1. The second pair was located five inches below the standard location during Run No. H/L-2. The experimental operations were identical and these tests are included with the rest of the asbestos cement sheet/saw (toothed blade) experiments. The results are summarized in Table 8. Though the individual results are somewhat variable, the average fiber concentration does not vary with position.

As noted, these concentration results are quite variable. The analysis displayed in the four columns at the right of Table 8 provides more conclusive information. Log-normal distributions on length and on diameter were plotted for all structures, except matrices, whether they were identified as being asbestos or not. If the cloud of particles were stratified due to settling the size of the particles and the percent of large particles should increase at the lower sampling locations. Neither of these results occurred, indicating that the particles were not stratified. Filter No. 235 appears to have a large percent of long fibers. There were just 12 total particles counted on this filter, however, one of these was a fiber with dimensions: length = 12.9 microns; diameter = 0.062 microns. This one anomalous fiber skewed the distribution and resulted in the relatively high projected percent of structures longer than 5 microns. The fiber is termed anomalous because the correlation coefficient (r^2) for the length distribution on Filter No. 235 was only 0.77. The r^2 values for the other seven length distributions ranged from 0.89 to 0.97 and averaged 0.94. Correlation coefficients for the diameter distributions were not nearly so good; they ranged from 0.52 to 0.64 and averaged 0.59. These correlations are poor because almost all fibers (which comprise approximately 75% of the structures) have a diameter of 0.062 microns. This point will be discussed in more detail in the section on comparison between TEM and PCM results.

TABLE 8. RESULTS OF PARTICLE STRATIFICATION TESTS
(ASBESTOS CEMENT SHEET/CUT OFF WHEEL)

Experiment Number	Filter Number	Location	Filter Orientation	Asbestos Fiber Concentration F/cc/gm Asbestos	All Structures Except Matrices			
					Length		Diameter	
					Geomet. Mean	% $\mu > 5$	Geomet. Mean	% $\mu > 0.3$
H/L-1	230	+ 5"	Upright	381.7	0.74	0.16	0.082	6.1
H/L-1	231	+ 5"	Inverted	300.0	0.88	3.3	0.090	7.6
H/L-1	232	0"	Upright	688.9	0.85	1.2	0.088	8.7
H/L-1	233	0"	Inverted	787.1	0.74	0.54	0.086	4.2
H/L-2	234	0"	Upright	66.9	0.63	0.02	0.070	1.2
H/L-2	235	0"	Inverted	43.7	0.77	11.2	0.081	7.0
H/L-2	236	- 5"	Upright	422.3	0.77	0.91	0.084	3.8
H/L-2	237	- 5"	Inverted	69.4	0.96	1.39	0.081	4.8
		Average at + 5" Position:		340.9	0.81	1.73	0.086	6.9
		Average at 0" Position:		396.7	0.75	3.24	0.081	5.3
		Average at - 5" Position:		245.9	0.86	1.15	0.083	4.3

FILTER ORIENTATION TESTS

One objective was to test whether filter orientation had an effect on the measured concentration of fibers. This was done by sampling pairs of filters one with the filter surface upright and one with the filter surface inverted. The material used was asbestos cement sheet, the operation was sawing (toothed blade). A total of seven such pairs of filters were analyzed. (Thirty-five more inverted filters were collected and carbon coated but not analyzed because funding was not available. These filters are in storage and can be analyzed in the future if it becomes desirable to do so.) Two tests of the difference between the concentrations measured by the upright and the concentrations measured by the inverted filters are shown in Table 9. The first tests the average concentration by the inverted filter against the average concentration by the upright filters that were exposed simultaneously with them. The second tests the inverted filters against all upright filters exposed during the sawing of asbestos cement sheet with the toothed blade. In neither case can we reject the hypothesis that the concentration measured by the inverted filters is less than or equal to the concentration measured with the upright filter at the 95% confidence level. Table 10 demonstrates that we must accept the hypothesis that the difference between the paired data average is zero.

REPRODUCIBILITY

After assembly of the glove box and machining apparatus but before initiation of the fiber release potential index runs, a series of ten identical experiments were done to assess the reproducibility of the entire procedure. Experimentally, these runs consisted of cutting an asbestos cement sheet with the masonry cut-off wheel. These runs were done before weighing of the coupons was incorporated into the experimental protocol so the weight of material milled was calculated from the density of the material and the volume of the cut. The results, Table 11, demonstrated that the procedure is reproducible. One of the ten runs (143-B-146) was reported to be too heavily loaded with particles to be analyzed accurately by TEM. In fact, the analyst reported that all of the filters were more heavily loaded than he would have liked them to be. The reproducibility of the nine runs for which analysis was possible is good. Even had the tenth value been twice as high as the highest reported value the relative standard deviation would have been less than 50%. Therefore, it was concluded that the procedure is reproducible and the work proceeded to development of the fiber release potential index.

ASBESTOS FIBER RELEASE POTENTIAL INDEX

After gaining assurance that the technique was reproducible, the experimental effort turned to development of a fiber release potential index. This index was to be a quantitative measure of the propensity of asbestos containing materials to release fiberous particles during their

TABLE 9. RESULTS OF UPRIGHT VS. INVERTED FILTER EXPERIMENTS (UNITS OF ASBESTOS FIBERS/cc/gm ASBESTOS MILLED - ASBESTOS CEMENT SHEET/SAWING)

Filter Orientation	Average Concentration	Standard Deviation	Relative Standard Deviation
Inverted	668.3	680.9	101.9
Upright (paired)	361.7	196.9	54.4
Upright (all runs)	305.4	363.7	119.1

Hypothesis: Average Inverted $\leq$ Average Upright

α: .05

$t_{\alpha = .05}$: -1.782

t: -1.144

Result: Cannot Reject Hypothesis

Hypothesis: Average Inverted $\leq$ Average Upright (all runs)

α: .05

$t_{\alpha = .05}$: -1.740

t: -1.528

Result: Cannot Reject Hypothesis

TABLE 10. "t" TEST OF PAIRED UPRIGHT/INVERTED RESULTS
(UNITS: ASBESTOS FIBERS/cc/gm ASBESTOS MILLED)

Run Number	Concentration		Difference (U - I)
	Upright	Inverted	
165	271.7	550.3	-278.6
167	236.6	914.3	-677.7
168	463.1	2013.1	-550.0
H/L-1+0	688.9	300.0	388.9
H/L-2+0	66.9	43.7	23.1
H/L-1+5	381.7	787.1	-405.4
H/L-2-5	422.3	69.4	352.9
	Average Difference:		-306.8
	Standard Deviation:		673.8
	Relative Standard Deviation:		219.6

Hypothesis: Average Inverted = Average Upright

α: .05

$t_{\alpha = .05}$: 2.447

t: -1.205

Result: Accept Hypothesis

TABLE 11. SUMMARY OF RESULTS FOR TEN IDENTICAL RUNS

Filter Identification	Cut Length (cm)	Cut Time (sec)	Wait Time (sec)	Sample Time (sec)	Flow Rate (l/min)	Sample Volume (L)	Number of Fibers Per Grid Opening (#)	Asbestos Fibers/cc/gm Asbestos Milled
143-B-146	2.38	30	600	600	1.2	12.0	--[a]	----[a]
145-B-151	2.22	30	600	600	1.2	11.7	55	1774
147-B-156	2.54	30	600	600	1.2	11.8	83	2323
149-B-161	2.38	30	615	600	1.2	12.1	64	1860
151-B-166	2.54	30	600	600	1.2	11.8	78	2178
153-B-171	2.69	30	600	600	1.3	12.5	86	2110
155-B-176	2.86	30	600	600	1.3	12.9	50	1415
157-B-181	2.69	30	605	600	1.3	12.7	76	1841
159-B-187	2.54	30	600	600	1.3	12.8	71	1754
161-B-193	2.54	30	600	600	1.3	12.7	51	1289
							Average:	1838
							:	338.6
							RSD:	18.4%

[a] Loading too heavy for accurate TEM count.

subjection to various industrial or commercial machining operations. Sawing (with two different types of saw blades), drilling, and grinding were selected as the operations to be tested. Asbestos cement sheet millboard and brake shoes were the materials chosen.

The results (Table 12) appear to form the basis for a system for ranking various material/operation (M/O) pairs. The t tests for statistical differences between the means of the various M/O pairs, shown in Table 13, were for the most part positive.

There are other differences between the various M/O pairs in terms of the types of structures that they are prone to produce. For example, brake shoe grinding produced significantly more bundles and clusters than any other operation when all structures are considered (Table 14) and when only asbestos structures are considered (Table 15). Sawing asbestos cement sheet with the toothed saw blade produced more matrix particles than any other operation. Interestingly, the percent of all structures that were identified as asbestos is more or less constant and is not well correlated with the percent asbestos in the material being milled. This probably implies that most of the non-asbestos particles generated during the milling operations are larger and settle from the aerosol during the ten minute waiting period. This means that the test procedure to a large extent segregates the important (asbestos related) portions of the dust created during milling from the less important generation of extraneous dust.

Interlaboratory Comparative TEM Results

Portions of five filters, one from each of the M/O except the asbestos cement/masonry cut-off wheel, were submitted to the U.S. EPA/IERL-Ci laboratory for analysis. These samples were handled exactly as all other samples except that prior to his sample preparation, the IITRI microscopist cut the Nuclepore® filter into pie shaped quarters. He sent one of these to the EPA laboratory and prepared his own sample from another.

The comparative results were not as good as it had hoped they would be. This apparently was due to the fact that the EPA microscopist encountered considerable difficulty in obtaining positive identifications for asbestos structures. The data (Table 16) for total fibers and total structures compare well for the two analyses; but the totals for asbestos fibers and asbestos structures do not, the EPA analysis is routinely lower. This trend is apparent in the raw data submitted by the two analysts, the EPA analysis contains many more citations of "ambiguous" structures than does the IITRI analysis. There also is some difference in the way the two microscopists assign the labels, fiber, bundles, cluster, and matrix to the various structures. This is apparent from the fact that the value reported for total structures is in close agreement while others, especially matrices do not agree so well.

Actually, any fiber found on any filter with a diameter less than 0.25 microns was in all probability an asbestos fiber. It seems that the

TABLE 12. ASBESTOS FIBER RELEASE POTENTIAL INDEX

Material/ Operation	Number of Tests	Asbestos Fibers per cc per gm Asbestos Milled		
		Average (f/cc/gm)	Standard Deviation	Relative Standard Deviation (%)
AC Sheet Cut-Off Wheel	9	1838.3	338.6	18.4
Millboard Saw	8	646.6	435.2	67.3
Brakes Grind	8	465.1	217.3	46.7
AC Sheet Saw	12	305.4	363.7	119.1
AC Sheet Drill	8	282.9	222.6	78.7
Millboard Drill	8	105.2	32.0	30.5

TABLE 13. RESULTS OF TESTS FOR SIGNIFICANCE OF DIFFERENCE BETWEEN MATERIAL/OPERATION PAIRS

	COAC	SMB	GB	SAC	DAC	DMB
COAC	---	Yes	Yes	Yes	Yes	Yes
SMB	Yes	---	No	Yes	Yes	Yes
GB	Yes	No	---	No	No	Yes
SAC	Yes	Yes	No	---	No	Yes
DAC	Yes	Yes	No	No	---	Yes
DMB	Yes	Yes	Yes	Yes	Yes	---

Yes = means statistically different at 95% confidence level

No = means not statistically different at 95% confidence level

COAC = asbestos cement sheet/cut-off wheel

SMB = millboard/saw (toothed blade)

GB = brake shoes/grind

SAC = asbestos cement sheet/saw (toothed blade)

DAC = asbestos cement sheet/drill

DMB = millboard/drill

TABLE 14. DISTRIBUTION OF STRUCTURE TYPES GENERATED DURING ASBESTOS RELEASE EXPERIMENTS (TEM ANALYSIS)

Operation	Fibers %	Bundles %	Clusters %	Matrices %
Cut-Off AC Sheet	76.3	9.5	6.4	7.8
Saw Millboard	77.2	5.2	12.3	5.3
Grind Brakes	63.2	14.2	18.8	3.8
Saw AC Sheet	62.4	12.4	5.5	18.7
Drill AC Sheet	82.5	3.8	6.1	7.5
Drill Millboard	93.4	0.0	2.5	4.1

TABLE 15. DISTRIBUTION OF ASBESTOS STRUCTURE TYPES GENERATED DURING ASBESTOS RELEASE EXPERIMENTS (TEM ANALYSIS)

Material/ Operation	Asbestos Structure Distribution				
	Percent Asbestos Fibers	Percent Asbestos Bundles	Percent Asbestos Clusters	Percent Asbestos Matrices	Percent Asbestos
AC Sheet Cut-Off Wheel	52.8	6.7	4.7	5.4	69.7
Millboard Saw	64.6	4.7	10.2	3.4	83.0
Brakes Grind	45.0	10.6	13.9	2.8	72.4
AC Sheet Saw	49.3	7.5	4.8	13.6	75.2
AC Sheet Drill	61.6	3.4	4.3	8.4	77.7
Millboard Drill	68.5	0.0	1.1	4.5	74.2

TABLE 16. COMPARISON OF EPA AND IITRI RESULTS
(RESULTS IN OBJECTS/cc/gm ASBESTOS MILLED)

Material:	AC Sheet		AC Sheet		Brake Lining		Millboard		Millboard			Stan-	Relat.
Operation:	Saw		Drill		Grind		Saw		Drill		IITRI	dard	Stand.
	EPA	IITRI	EPA	IITRI	EPA	IITRI	EPA	IITRI	EPA	IITRI	EPA	Devia- tion	Devia- tion
Asbestos Fibers	105.8	472.0	76.3	431.5	71.4	249.8	43.4	424.6	2.9	17.2	5.86	2.4	40.9
All Fibers	232.8	539.4	203.5	462.3	124.9	288.3	1752.4	498.4	34.6	17.2	1.80	1.01	56.1
All Bundles	63.5	192.6	19.1	15.4	53.6	32.0	115.9	67.7	0.0	0.0	1.30	1.2	94.8
All Clusters	42.3	96.3	0.0	70.1	35.7	83.3	0.0	166.1	0.0	0.0	2.31	----	----
All Matrices	95.2	144.5	6.4	61.6	11.9	19.2	391.1	55.4	0.0	0.0	3.22	4.32	134.0
Total Chrysotile	158.7	664.6	57.2	462.3	95.2	294.7	29.0	627.6	2.9	6.9	7.88	8.00	101.6
Total Amphibole	21.2	19.3	19.1	38.5	23.8	6.4	29.0	0.0	0.0	10.3	1.06	----	----
Total Asbestos	179.9	684.0	76.3	500.8	119.0	301.1	57.9	627.6	2.9	17.2	5.93	3.19	42.4
Total Objects	433.8	972.9	228.9	616.4	226.1	422.8	2245.0	787.6	34.6	17.2	1.53	1.05	68.8

IITRI analysis was more efficient (75% vs. 15%) at making the positive identifications.

Comparison of TEM to PCM Results

Millipore filter samples were collected for PCM analysis during all M/O runs except those for sawing of asbestos cement sheet with the cut-off wheel. The results of the PCM analyses were compared to the TEM analyses of the Nuclepore® filter samples that were collected simultaneously for four of the M/O experiments. The samples taken for PCM analysis during the brake shoe/grinding experiments and the inverted Millipore® filter samples have been saved but not analyzed because of budgetary restrictions.

It was first attempted to correlate the PCM result to the total asbestos fiber result of the TEM analysis. It was thought that even though the TEM is able to discern far smaller and therefore far more fibers than the PCM, that there might be some multiplier which could be applied to the PCM result to adjust for its lesser sensitivity. The absolute concentration of asbestos fibers by TEM is in column 3 of Table 17 and the concentrations reported by the PCM analyst are in the last column. Slopes and correlation coefficients are shown in Table 18. The correlation between the two measurements is decent for the millboard/saw experiment. The results for the other experiments are poor: the slopes are negative and the correlation coefficients near zero.

We next tried to correlate all structures (except matrices) found by TEM to the PCM result. The correlations were similar to those obtained for the asbestos fibers.

Next, an attempt was made to correlate the total NIOSH fibers (fibers larger than 5 microns with an aspect ratio $\geq$ 3.0) actually counted by the TEM analyst to the PCM result. Such fibers were seed on only 2 of the 32 filters analyzed by TEM. The correlation was uniformly poor.

Next, all structures (again except matrices), asbestos or not, having a length greater than 5 microns and an aspect ratio $\geq$ 3.0 reported by the TEM were considered. Again, no correlation was found.

The scatter and the large number of zeros in the TEM data for these last two sets implied that the difficulty might lie in the small probability that the infitesimal area actually seen by the TEM might not be representative of the total number of large asbestos fibers on the entire filter. However, it was felt that there were a sufficient number of particles analyzed by TEM to define the distribution of all asbestos fibers (or structures) on the filter. Log-normal distributions were therefore plotted for all 32 of these samples. Figure 8 is an example; Appendix B contains all of these plots. These plots are excellent. Correlations between frequency of occurrence and the logarithm of fiber length ranged upward from 0.8 and averaged approximately 0.95. The statistics for these plots are summarized in Table 19, the remarkable observation being that the geometric mean asbestos fiber length is approximately 0.84 microns and

TABLE 17. COMPARISON OF TRANSMISSION ELECTRON MICROSCOPE (TEM) AND PHASE CONTRAST MICROSCOPE (PCM) RESULTS (ALL RESULTS IN STRUCTURES/cc)

Material/ Operation	Experiment Number	TEM Results (IITRI)							PCM Result
				Counted		Log-Normal Extrapolated			
		Total All Asbestos Fibers	Total All Structures[a]	NIOSH Asbestos Fibers > 5 μ	Total All Structures[a] > 5 μ	Asbestos Fibers > 5 μ	All Structures[a] > 5 μ	Clusters and Bundles > 5 μ	
AC Sheet	169	56.4	108.3	0	2.3	0.33	2.5	3.75	0.49
Saw	170	317.4	426.3	0	4.7	0	0.47	5.55	0.26
	171	164.9	276.0	0	6.7	0.067	7.07	2.77	2.64
	172	92.9	132.4	4.64	11.6	4.85	7.55	1.66	0.60
	173	63.1	86.5	0	2.5	0.28	2.23	3.55	0.72
	174	25.0	47.7	0	0	0.065	1.05	1.02	0.96
	175	17.1	43.9	0	2.4	0.68	1.6	2.26	0.95
	176	16.9	41.0	0	0	1.40	0.58	1.66	2.15
AC Sheet	195	71.6	106.2	0	2.5	0.26	----	----	0
Drill	196	208.7	271.7	0	3.3	0.02	----	----	0
	197	40.3	45.7	0	0	0.14	----	----	0
	198	216.1	281.6	0	0	0.09	----	----	1.19
	200	67.7	89.4	0	0	0.03	----	----	0
	201	30.4	43.2	0	0	0	0.18	----	0
	202	27.1	37.0	0	0	0.03	----	----	0.26
	203	150.8	172.3	0	2.7	0.15	----	----	0

(Continued)

TABLE 17. CONTINUED

Material/ Operation	Experiment Number	TEM Results (IITRI)							PCM Result
				Counted		Log-Normal Extrapolated			
		Total All Asbestos Fibers	Total All Structures[a]	NIOSH Asbestos Fibers > 5 μ	Total All Structures[a] > 5 μ	Asbestos Fibers > 5 μ	All Structures[a] > 5 μ	Clusters and Bundles > 5 μ	
Millboard Saw	177	220.5	345.0	3.6	14.2	3.64	10.7	10.6	1.93
	178	229.5	285.1	0	0	0.23	----	0.05	2.64
	179	658.9	833.6	0	0	4.68	----	0	4.11
	180	548.0	714.8	0	7.9	0.38	----	9.3	2.65
	181	42.5	57.5	0	0	0.93	----	0.01	1.69
	182	173.7	216.6	0	2.5	1.03	----	1.1	1.92
	183	201.1	271.2	0	6.1	3.52	----	4.1	1.46
	184	360.2	537.5	0	17.15	0.68	----	18.0	3.15
Millboard Drill	204	22.5	37.5	0	0	0	0.0075	----	0
	205	26.4	39.5	0	0	0.042	0.012	----	0
	207	20.0	22.5	0	0	0.048	0.036	----	0.27
	208	18.0	25.7	0	0	0.112	0.055	----	0
	209	32.1	39.5	0	0	0.019	0.044	----	0
	210	24.0	24.0	0	2.67	1.013	1.013	----	0
	211	13.0	13.0	0	0	0	0	----	0
	212	10.4	13.0	0	0	1.45	1.243	----	0

[a] All structures except matrices.

TABLE 18. CORRELATION BETWEEN PHASE CONTRAST MICROSCOPE (PCM) RESULTS AND TRANSMISSION ELECTRON MICROSCOPE (TEM) RESULTS

Material/Operation	AC Sheet Saw	AC Sheet Drill	Millboard Saw	Millboard Drill
PCM vs. All Asbestos Fibers				
Slope	-20.65	-3.07	198.2	-3.39
r^2	0.029	0.128	0.718	0.002
PCM vs. All Structures[a]				
Slope	-12.83	126.9	252.5	-18.4
r^2	0.006	0.28	.707	0.025
PCM vs. Counted Structures > 5 μ				
Slope	-0.407	-1.26	-0.16	-1.41
r^2	0.008	0.13	0.0004	0.02
PCM vs. Counted Asbestos Fibers > 5 μ				
Slope	-0.46	-1.26	-0.16	?[b]
r^2	0.056	0.126	0.0004	0
PCM vs. Extrapolated Structures > 5 μ				
Slope	0.933	----	----	-1.12
r^2	0.078	----	----	0.04
PCM vs. Extrapolated Asbestos Fibers > 5 μ				
Slope	-0.249	-0.013	-0.89	-1.22
r^2	0.165	0.004	0.323	0.042
PCM vs. Extrapolated Asbestos Clusters and Bundles > 5 μ				
Slope	-0.71	----	1.15	----
r^2	0.165	----	0.029	----

a All structures except matrices.
b Only one of the eight PCM values was > 0.

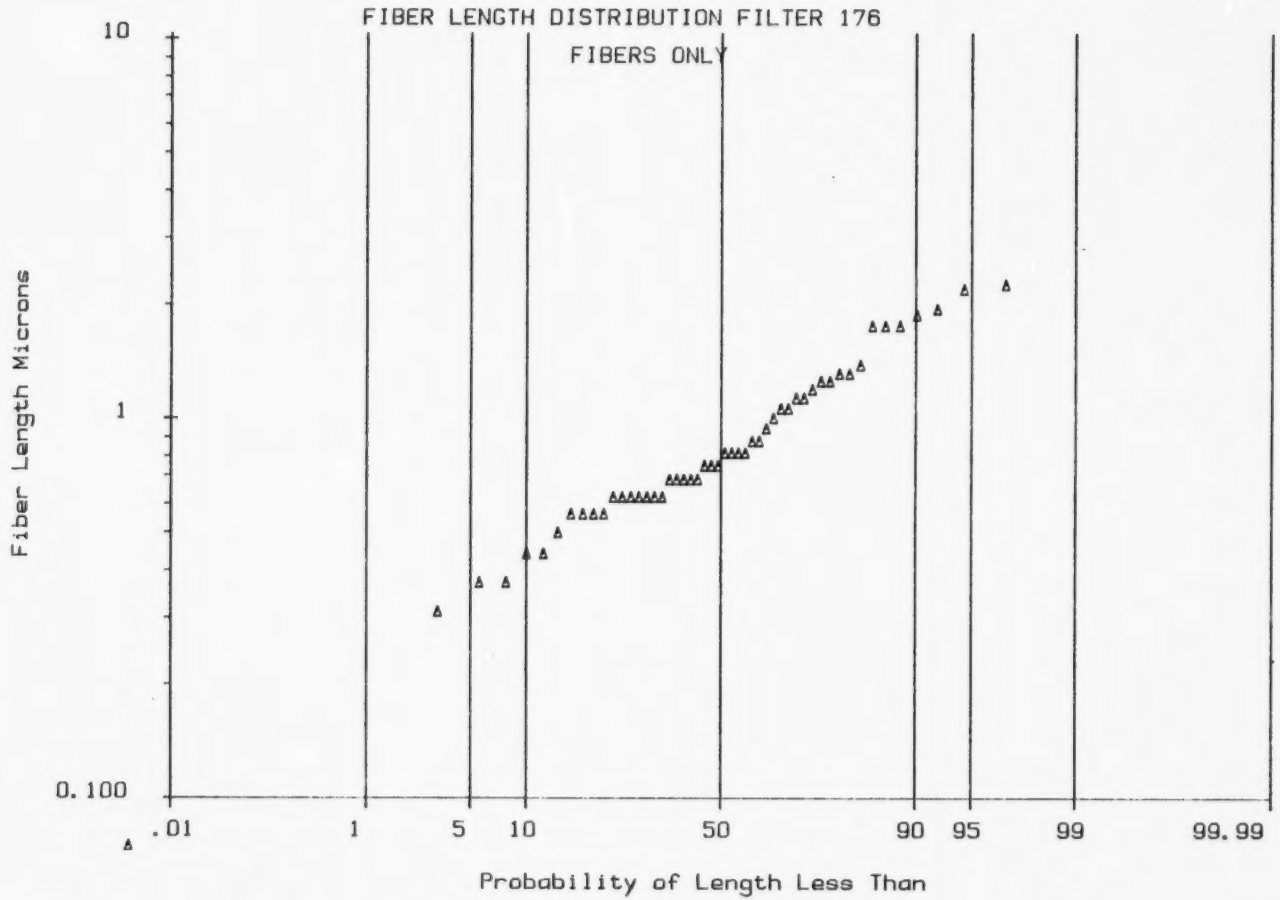

Figure 8. Fiber length distribution filter 176, fibers only.

TABLE 19. SUMMARY OF LOG-NORMAL PLOTS OF TRANSMISSION ELECTRON MICROSCOPE DATA (ASBESTOS FIBERS WITH ASPECT RATIO $\geq$ 3.0)

Material/ Operation	Intercept[a]				Slope[a]		
	r^2	Average Geometric Mean (μ)	Standard Deviation	Relative Standard Deviation (%)	Average	Standard Deviation	Relative Standard Deviation (%)
AC Sheet Saw	0.937	0.988	0.303	30.6	0.682	0.131	19.2
Millboard Saw	0.967	0.889	0.120	13.4	0.722	0.144	20.0
AC Sheet Drill	0.946	0.695	0.059	8.4	0.617	0.105	17.0
Millboard Drill	0.903	0.709	0.136	19.2	0.821	0.444	54.1
Brakes Grind	0.950	0.870	0.141	16.2	0.705	0.112	15.9
AC Sheet Cut-Off Wheel	0.971	0.868	0.041	4.7	0.617	0.064	10.4

[a] From equation of the line: Log L = Log (Intercept) + Z (Slope). Where: L = fiber length, Z = σ units from the mean.

that it does not vary significantly among the various M/O. It is also interesting that the slopes of these lines, except for the millboard drilling experiments, are all similar.

Once these plots (lines of best fit) were available, it was possible to calculate the percentage of the total asbestos fibers (and structures) that were longer than 5 microns. Multiplying this fraction by the total number of structures counted could yield a better estimate of the concentration of asbestos fibers (or total structures) than the actual counts. This calculation was performed for all structures for two experiments and for bundles and clusters for two experiments in addition to the computation for asbestos fibers for all four experiments. The correlations between these computed concentrations and the PCM measured concentrations were again very poor.

The numbers and percentages of asbestos fibers, all structures, and asbestos bundles and clusters that project to be longer than 5 microns are shown in Table 20. The inescapable conclusion is that almost none of the structures generated and measured during these tests are longer than 5 microns, that restricting the analysis to those that exceed 5 microns is tantamount to deciding to ignore 99% of all the asbestos fibers generated during the machining operation.

The difficulty in correlating TEM with PCM results appears to be caused by the fact that almost all of the structures identified by the TEM are smaller than 0.3 microns in diameter. Figure 9, a scatter diagram of the logarithm of fiber length vs. the logarithm of fiber diameter, illustrates this point. Similar plots for all experiments, except sawing of asbestos cement sheet with the cut-off wheel were prepared. Only 14 of the 480 structures reported by TEM for the eight sawing asbestos cement sheet with the toothed blade were larger than 0.3 microns in diameter. When only asbestos fibers are considered the situation is even worse. The TEM has sufficient resolution so that any structure larger than 0.125 microns in diameter is classified as a bundle or cluster. There are by definition almost no TEM fibers larger than 0.125 microns. This observation led to the attempt (see Tables 17 and 18) to correlate the PCM result to the concentration of clusters and bundles longer than 5 microns with aspect ratios $\geq$ 3.0. Table 8 contains clues as to why this may have failed. In the first place the log-normal distributions on particle diameter are not well correlated because the majority (more than 90%) of all fibers have a diameter of 0.0625 microns. The large number of small diameter particles weighs down the lower end of the distribution. In the second place there is no correlation between the fraction of particles longer than 5 microns and the fraction having a diameter greater than 0.3 microns. We have arbitrarily chosen 0.3 microns as the smallest size particle visible with the PCM. It may be that 0.2 micron particles are visible to a skilled microscopist but that would not change the conclusion that the vast majority of particles reported by TEM are not visible with a light microscope. Figure 10 illustrates the PCM operator's difficulty. This electron photomicrograph

TABLE 20. SUMMARY OF LOG-NORMAL STATISTICS FOR FIBERS AND OTHER STRUCTURES (CONSIDER ONLY STRUCTURES WITH ASPECT RATIO ≥ 3.0)

Material/ Operation	No. of Runs	Asbestos Fibers				All Structures but Matrices				Asbestos Bundles and Clusters			
		Number Found	Geomet. Mean Length (μ)	% > 5 μ	Number > 5 μ	Number Found	Geomet. Mean Length (μ)	% > 5 μ	Number > 5 μ	Number Found	Geomet. Mean Length (μ)	% > 5 μ	Number > 5 μ
AC Sheet Saw	8	28.6	0.988	2.35	0.67	46.0	1.02	2.57	1.18	6.2	2.23	18.4	1.13
Millboard Saw	8	61.9	0.889	0.91	0.56	83.3	----	----	----	10.4	1.59	8.4	0.87
AC Sheet Drill	8	34.6	0.695	0.12	0.04	44.6	----	----	----	----	----	----	----
Millboard Drill	8	8.1	0.709	2.40	0.20	10.5	0.674	1.79	0.19	----	----	----	----
Brakes Grind	8	42.4	0.870	0.96	0.41	----	----	----	----	----	----	----	----
AC Sheet Cut-Off Wheel	9	68.4	0.868	0.29	0.20	----	----	----	----	----	----	----	----

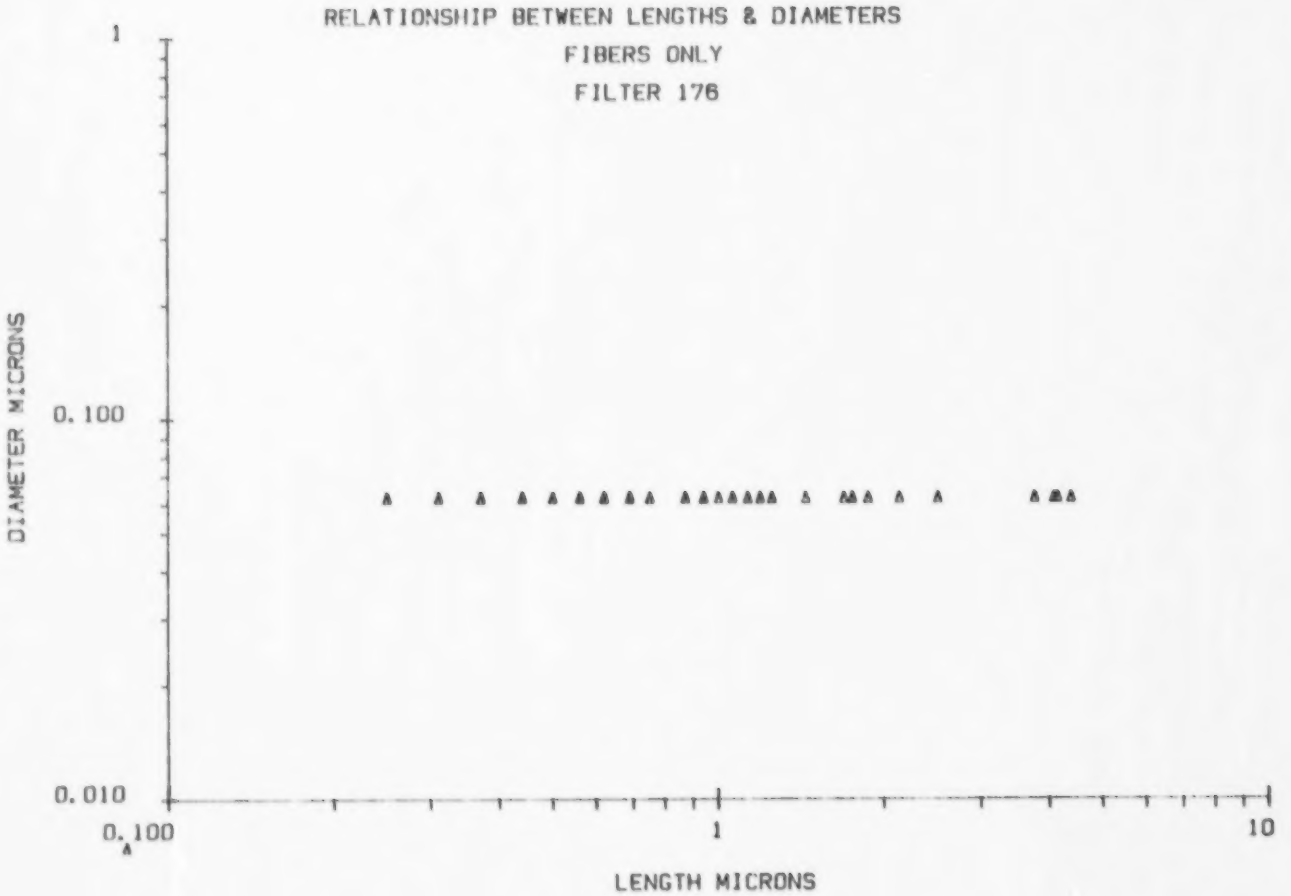

Figure 9. Relationship between lengths & diameters, fibers only, filter 176.

Figure 10. Electron photomicrograph of fibers, bundles, and matrix particles - asbestos cement sheet/saw.

reveals several structures that are obviously distinct single fibers and two larger bundles of fibers. The larger of these two would be seen by PCM and labeled a fiber.

Note that 0.0625 microns is an approximation of the fiber diameter that results from the rounding to the nearest 1/16 micron. Precision measurements by other researchers indicate that this smallest diameter that is regarded as comprising an asbestos fiber lies between 0.03 and 0.07 microns.

The total number of fibers counted during the PCM analyses was somewhat low; only the filters collected during the millboard sawing experiments exceeded the 10 counts/100 fields criteria established by NIOSH. This, in itself, is an interesting result. Ten minutes after cessation of a shaping operation the PCM analysis shows low levels of fibers when in fact the concentration of asbestos fibers is in the hundred of fibers per cubic centimeter. Projections of the number of concentration of clusters and bundles; which are the structures most likely to be identified as fibers by a light microscopist, indicate the values of their cocnentrations to be over twice the concentrations measured by PCM. If structures identified as fibers, almost all of which have such small diameters that they are not visible by PCM, are included the error increases. Further, other researchers have reported that if TEM counts are extended to thousands of particles (from the hundred or so counted in these analyses) that more large (>5 microns) structures are found than is expected based upon the log-normal distribution of the shorter fibers. This again implies that the PCM method, in addition to not detecting over 99% of the total asbestos particles in the aerosol has underestimated the concentrations of structures it ought to have measured by a significant margin.

It is not surprising that no correlations between asbestos fiber counts made by the PCM and TEM methods could be found, this observation has been made by numerous investigators. Chatfield (4) observed ". . . an optical fiber count made on an environmental sample usually yields a definite value, [but] this value is totally unrelated to the presence or absence of asbestos." Gibbs and Hwang (5) observed that ". . . fibers which are visible in the light microscope represent only a small proportion of that fiber count." Hwang and Wang (6) and Yamate (7) have made similar observations. Chatfield (4) offers a possible reason why the attempts at predicting PCM results from various portions of the TEM data have failed. He has observed that the apparent log normality of the fiber size distributions breaks down when large numbers of fibers are counted.

The TEM data contains far more information than the PCM data. It seems likely that some subset of the TEM data might correlate with the PCM data. We have not yet been able to define that subset, though we know that it will not be TEM fibers. It may be that the PCM result is correlated with the population of structures having lengths greater than 5 microns and aspect ratios between 3.0 and 17.0. Placing the upper bound on the aspect ratio will eliminate those structures that are too small to be seen on the PCM.

SECTION 6

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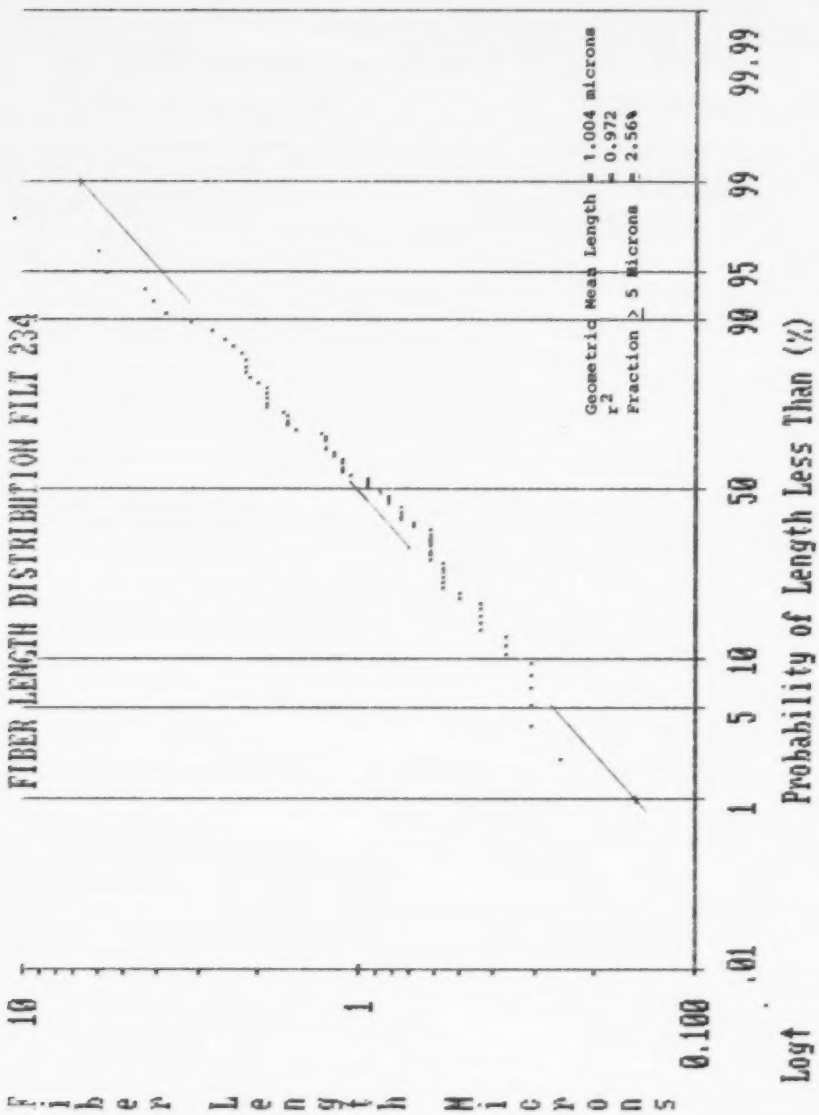
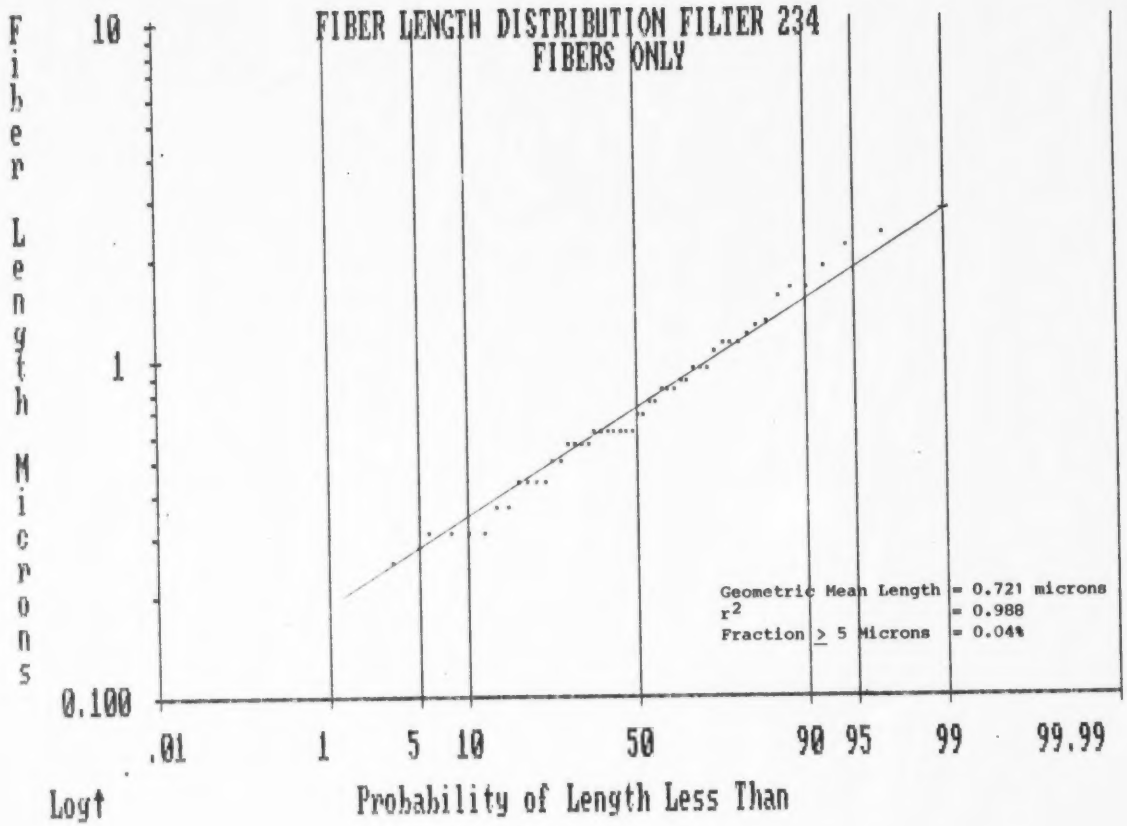
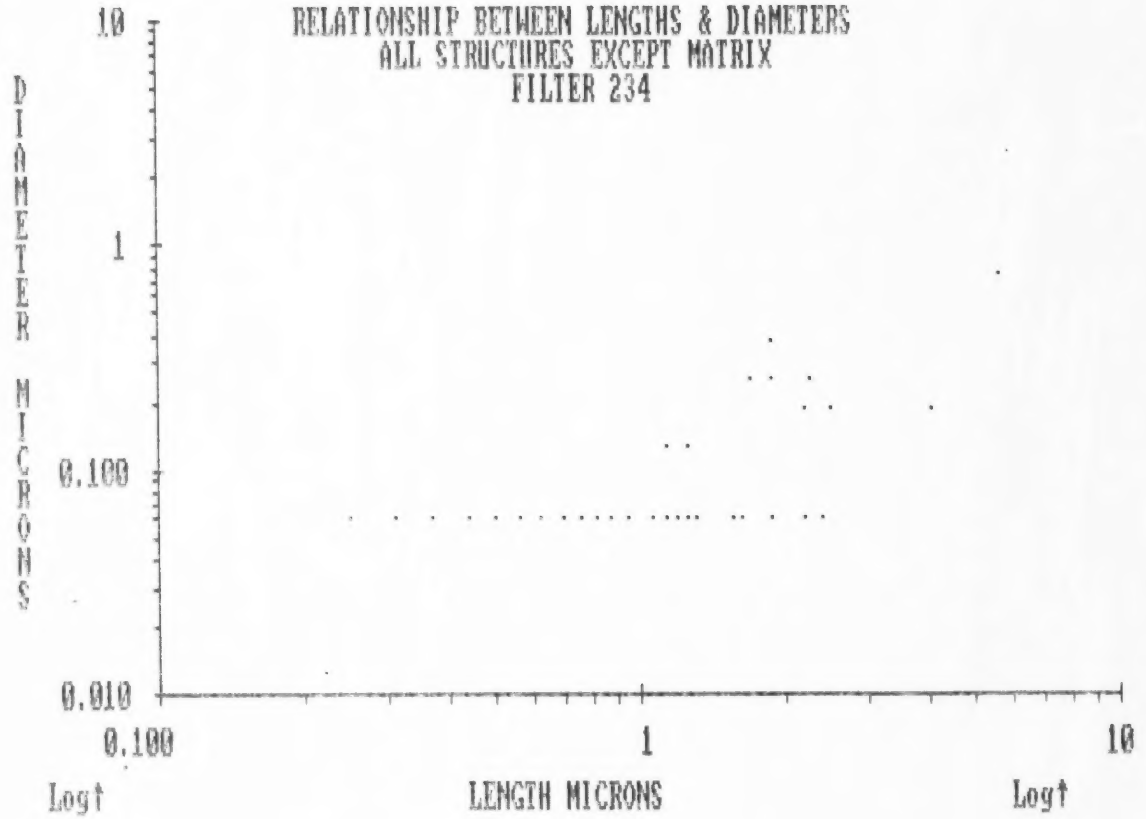
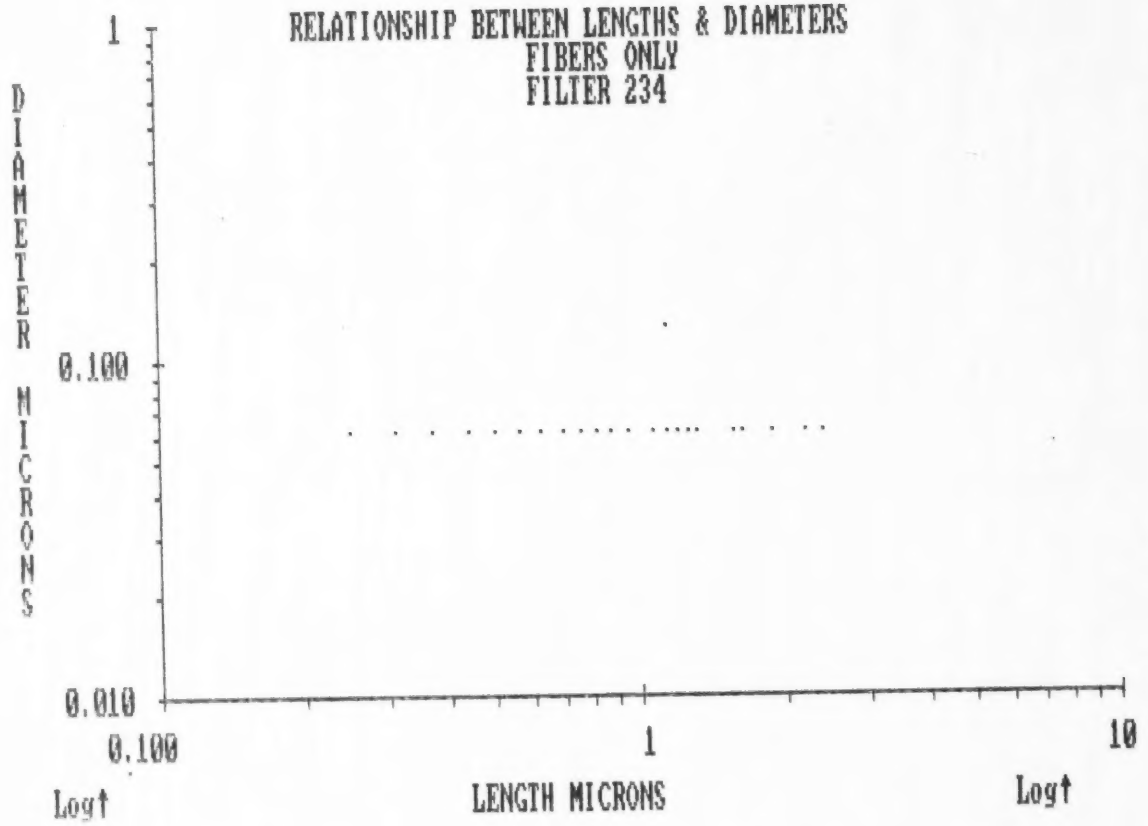
APPENDIX A

REPRESENTATIVE LOG-NORMAL DISTRIBUTIONS




FIBER LENGTH DISTRIBUTION FILTER 234
FIBERS ONLY
Fiber Length Microns
10
1
0.100
.01
1
5
10
50
90
95
99
99.99
Logt
Probability of Length Less Than
Geometric Mean Length = 0.721 microns
r2 = 0.988
Fraction ≥ 5 Microns = 0.04%


RELATIONSHIP BETWEEN LENGTHS & DIAMETERS
ALL STRUCTURES EXCEPT MATRIX
FILTER 234
DIAMETER MICRONS
10
1
0.100
0.010
0.100
1
10
Log↑
LENGTH MICRONS
Log↑


RELATIONSHIP BETWEEN LENGTHS & DIAMETERS
FIBERS ONLY
FILTER 234
DIAMETER MICRONS
1
0.100
0.010
0.100
1
10
Log†
LENGTH MICRONS
Log†

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-017 145-B-151

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambia	Not Asbe	No Patt	X-Ray
1	1	B	0.062	0.187	0.94	5.0	.	.	X	.	.	
1	2	B	0.062	0.375	1.06	2.8	.	.	X	.	.	
1	3	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	4	B	0.062	0.312	1.87	6.0	0.095	.	.	.	.	
1	5	F	0.000	0.062	0.56	9.0	.	.	X	.		
1	6	B	0.062	0.312	1.75	5.6	.	.	X	.	.	
1	7	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	8	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	9	F	0.000	0.062	0.81	13.0	.	.	X	.	.	
1	10	C	0.062	0.312	0.94	3.0	.	.	X	.	.	
1	11	B	0.062	0.125	0.62	5.0	.	.	X	.	.	
1	12	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	13	F	0.000	0.062	0.44	7.0	.	.	X	.	.	
1	14	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
1	15	F	0.000	0.062	0.75	12.0	.	.	X	.	.	
1	16	C	0.062	0.250	1.25	5.0	.	.	.	.	X	
1	17	F	0.000	0.062	0.94	15.0	.	.	X	.	.	
1	18	C	0.062	0.625	1.25	2.0	.	.	X	.	.	
1	19	M	3.125	0.250	1.87	7.5	.	.	X	.	.	
1	20	M	3.750	0.625	1.25	2.0	.	.	X	.	.	
1	21	M	0.625	0.062	2.50	40.0	0.254	.	.	.	.	
1	22	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	23	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	24	B	0.062	0.187	4.06	21.7	0.124	.	.	.	.	
1	25	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	26	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
1	27	B	0.062	0.187	3.75	20.0	0.114	.	.	.	.	
1	28	F	0.000	0.062	0.44	7.0	.	.	X	.	.	
1	29	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-017

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambis	Not Asbe	No Fati	X-Ray
1	30	F	0.000	0.062	1.50	24.0	0.012	.	.	.	.	
1	31	B	0.062	0.125	0.62	5.0	0.013	.	.	.	.	
1	32	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	33	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
1	34	F	0.000	0.062	0.75	12.0	.	.	X	.	.	
1	35	M	0.437	0.062	1.00	16.0	0.071	.	.	.	.	
1	36	F	0.000	0.062	0.94	15.0	.	.	X	.	.	
1	37	F	0.000	0.062	0.75	12.0	.	.	X	.	.	
1	38	B	0.062	0.375	4.69	12.5	0.286	.	.	.	.	
1	39	B	0.062	0.187	2.81	15.0	0.086	.	.	.	.	
1	40	C	0.062	1.250	1.25	1.0	.	.	X	.	.	
1	41	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	42	B	0.062	0.125	2.63	21.0	0.053	.	.	.	.	
1	43	F	0.000	0.062	1.44	23.0	0.011	.	.	.	.	
1	44	F	0.000	0.062	1.31	21.0	0.010	.	.	.	.	
1	45	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
1	46	F	0.000	0.125	0.62	5.0	0.020	.	.	.	.	
1	47	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	48	F	0.000	0.062	0.44	7.0	.	.	X	.	.	
1	49	B	0.062	0.500	3.12	6.2	.	.	X	.	.	
1	50	C	0.062	1.250	2.50	2.0	.	.	X	.	.	
1	51	C	0.062	0.625	1.25	2.0	0.127	.	.	.	.	
1	52	F	0.000	0.125	2.63	21.0	0.084	.	.	.	.	
1	53	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	54	M	0.937	0.125	0.75	6.0	.	.	X	.	.	
1	55	B	0.062	0.125	1.31	10.5	0.027	.	.	.	.	
1	56	F	0.000	0.062	0.62	10.0	.	.	X	.	.	
1	57	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
1	58	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-017

Grd			Size (Micron)				Mass (Picogram)			Not	No	
Opn	Obj	Str	Depth	Width	Length	Ratio	Chrysotile	Amphibole	Ambig	Asbe	Patt	X-Ray
1	59	B	0.062	0.125	2.19	17.5	0.044	.	.	.	.	
1	60	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	61	M	0.500	0.062	0.62	10.0	.	.	.	.	X	
1	62	F	0.000	0.062	0.94	15.0	.	.	X	.	.	
1	63	F	0.000	0.062	0.75	12.0	.	.	.	.	X	
1	64	C	0.062	0.312	0.62	2.0	.	.	X	.	.	
1	65	F	0.000	0.062	0.62	10.0	.	.	X	.	.	
1	66	F	0.000	0.062	0.75	12.0	.	.	X	.	.	
1	67	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	68	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	69	F	0.000	0.062	0.50	8.0	.	.	X	.	.	
1	70	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
1	71	M	0.625	0.125	0.75	6.0	0.152	.	.	.	.	
1	72	F	0.000	0.062	0.62	10.0	.	.	X	.	.	
1	73	M	3.750	0.187	1.63	8.7	2.971	.	.	.	.	
1	74	B	0.062	0.125	5.00	40.0	0.102	.	.	.	.	
1	75	M	0.500	0.250	0.62	2.5	0.203	.	.	.	.	
1	76	B	0.062	0.375	4.75	12.7	0.289	.	.	.	.	
1	77	B	0.062	0.125	0.94	7.5	0.019	.	.	.	.	
1	78	B	0.062	0.125	0.75	6.0	0.015	.	.	.	.	
1	79	C	0.062	0.125	1.13	9.0	.	.	X	.	.	
1	80	B	0.062	0.125	0.50	4.0	0.010	.	.	.	.	
1	81	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
1	82	C	0.062	0.625	0.94	1.5	.	.	X	.	.	
1	83	M	0.312	0.062	0.69	11.0	0.035	.	.	.	.	
1	84	C	0.062	0.500	1.56	3.1	.	.	X	.	.	
1	85	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
1	86	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	87	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-017

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	88	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	89	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
1	90	B	0.062	0.312	3.12	10.0	0.159	.	.	.	.	
1	91	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	92	F	0.000	0.062	0.37	6.0	.	.	X	.	.	
1	93	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	94	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	95	F	0.000	0.062	1.63	26.0	.	.	X	.	.	
1	96	F	0.000	0.062	0.75	12.0	.	.	X	.	.	
1	97	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
1	98	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	
1	99	F	0.000	0.062	2.13	34.0	0.017	.	.	.	.	
1	100	M	0.312	0.062	0.56	9.0	.	.	X	.	.	
1	101	F	0.000	0.062	2.81	45.0	0.022	.	.	.	.	
1	102	F	0.000	0.062	1.19	19.0	.	.	X	.	.	
1	103	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	104	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
1	105	F	0.000	0.062	1.94	31.0	0.015	.	.	.	.	
1	106	M	1.250	0.125	0.75	6.0	0.305	.	.	.	.	
1	107	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	108	B	0.062	0.250	1.25	5.0	.	.	X	.	.	
1	109	M	2.625	0.125	1.25	10.0	1.066	.	.	.	.	
1	110	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	111	F	0.000	0.125	1.13	9.0	0.036	.	.	.	.	
1	112	M	4.375	0.625	0.62	1.0	4.443	.	.	.	.	
1	113	F	0.000	0.062	1.69	27.0	0.013	.	.	.	.	
1	114	F	0.000	0.062	1.87	30.0	.	.	X	.	.	
1	115	M	3.125	0.625	0.62	1.0	.	.	X	.	.	
1	116	M	5.625	0.625	1.25	2.0	.	.	X	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-017

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	117	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
1	118	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	119	B	0.062	0.312	1.25	4.0	.	.	X	.	.	
1	120	F	0.000	0.062	1.75	28.0	0.014	.	.	.	.	
1	121	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	
1	122	B	0.062	0.375	2.81	7.5	.	.	X	.	.	
1	123	F	0.000	0.062	2.00	32.0	0.016	.	.	.	.	
1	124	C	0.062	0.625	1.25	2.0	0.127	.	.	.	.	
1	125	F	0.000	0.062	1.06	17.0	0.008	.	.	.	.	
1	126	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	127	F	0.000	0.062	2.50	40.0	0.020	.	.	.	.	
			Total Mass (Picogram)=				11.753	0.000				
			Total Count			=	81.	0.	43.	0.	3.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-017 TABLE PREPARATION DATE: 31-AUG-82

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	55.	834598.	8533.4	0.07 ± 0.01	1.04 ± 0.58	16.05 ± 8.76
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	22.	333839.		0.06 ± 0.00	0.79 ± 0.37	12.68 ± 5.92
	All Fiber	77.	1168437.		0.06 ± 0.01	0.97 ± 0.54	15.09 ± 8.18
Bundle	Chrysotile	15.	227618.	21708.2	0.20 ± 0.10	2.60 ± 1.59	13.96 ± 9.32
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	8.	121396.		0.30 ± 0.12	1.60 ± 0.91	5.15 ± 1.90
	All Bundle	23.	349014.		0.23 ± 0.11	2.25 ± 1.45	10.89 ± 8.62
Cluster	Chrysotile	2.	30349.	3852.9	0.62 ± 0.00	1.25 ± 0.00	2.00 ± 0.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	9.	136571.		0.58 ± 0.41	1.27 ± 0.53	3.18 ± 2.47
	All Cluster	11.	166920.		0.59 ± 0.37	1.27 ± 0.48	2.97 ± 2.25
Matrix	Chrysotile	2.	136571.	144166.0	0.18 ± 0.18	1.99 ± 0.63	11.24 ± 11.65
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	7.	106222.		0.34 ± 0.27	0.99 ± 0.49	5.36 ± 3.62
	All Matrix	16.	242792.		0.25 ± 0.23	1.05 ± 0.55	8.67 ± 9.35

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 05282/A-3
Individual Grid Opening = 0.000066 Sq Cm
Number of Grid Openings = 1
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-018 147-B-156

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Fati	X-ray
1	1	B	0.062	0.187	5.00	26.7	0.152	.	.	.	.	
1	2	F	0.000	0.125	0.75	6.0	.	.	.	X	.	
1	3	F	0.000	0.062	2.88	46.0	0.023	.	.	.	.	
1	4	F	0.000	0.062	2.81	45.0	0.022	.	.	.	.	
1	5	F	0.000	0.125	1.87	15.0	0.060	.	.	.	.	
1	6	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	7	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	8	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	9	F	0.000	0.125	2.38	19.0	0.076	.	.	.	.	
1	10	F	0.000	0.125	1.25	10.0	.	.	X	.	.	
1	11	C	0.062	0.125	1.25	10.0	0.025	.	.	.	.	
1	12	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	13	F	0.000	0.062	0.75	12.0	.	.	.	.	X	
1	14	F	0.000	0.062	3.63	58.0	0.029	.	.	.	.	
1	15	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	16	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	17	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	18	F	0.000	0.062	0.75	12.0	.	.	.	.	X	
1	19	F	0.000	0.062	2.81	45.0	0.022	.	.	.	.	
1	20	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	21	F	0.000	0.062	1.56	25.0	0.012	.	.	.	.	
1	22	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	23	F	0.000	0.062	0.31	5.0	.	.	.	.	X	
1	24	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	25	F	0.000	0.062	0.87	14.0	.	.	X	.	.	
1	26	B	0.062	0.125	0.94	7.5	0.019	.	.	.	.	
1	27	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
1	28	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	29	F	0.000	0.062	0.62	10.0	.	.	.	.	X	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-018

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Amos	Not Asbe	No Patt	X-Ray
1	30	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
1	31	F	0.000	0.062	0.56	9.0	.	.	X	.	.	
1	32	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	33	F	0.000	0.062	2.63	42.0	0.021	.	.	.	.	
1	34	C	0.062	0.125	1.56	12.5	0.032	.	.	.	.	
1	35	F	0.000	0.125	0.94	7.5	0.030	.	.	.	.	
1	36	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	37	C	0.062	0.875	3.12	3.6	.	.	X	.	.	
1	38	F	0.000	0.062	1.56	25.0	0.012	.	.	.	.	
1	39	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	40	B	0.062	0.125	0.94	7.5	.	.	X	.	.	
1	41	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	42	F	0.000	0.062	1.13	18.0	.	.	X	.	.	
1	43	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	44	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	45	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	46	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	47	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	48	F	0.000	0.062	1.31	21.0	0.010	.	.	.	.	
1	49	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	50	F	0.000	0.375	2.38	6.3	.	.	X	.	.	
1	51	F	0.000	0.062	1.81	29.0	.	.	.	.	X	
1	52	M	0.312	0.062	0.62	10.0	.	.	X	.	.	
1	53	F	0.000	0.062	1.87	30.0	.	.	X	.	.	
1	54	B	0.062	0.187	2.19	11.7	0.067	.	.	.	.	
1	55	C	0.062	0.125	1.87	15.0	0.038	.	.	.	.	
1	56	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	57	F	0.000	0.062	1.00	16.0	.	.	.	.	X	
1	58	B	0.062	0.125	1.25	10.0	0.025	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-018

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Combin	Not Asbe	No Fatt	X Fav
1	59	C	0.062	0.312	0.94	3.0	0.048	.	.	.	.	
1	60	C	0.062	0.125	0.81	6.5	0.017	.	.	.	.	
1	61	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	62	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	63	C	0.062	0.187	2.00	10.7	.	.	X	.	.	
1	64	F	0.000	0.062	0.50	8.0	.	.	X	.	.	
1	65	B	0.062	0.250	0.62	2.5	0.025	.	.	.	.	
1	66	F	0.000	0.062	2.63	42.0	0.021	.	.	.	.	
1	67	F	0.000	0.062	2.13	34.0	0.017	.	.	.	.	
1	68	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	69	B	0.062	0.125	0.50	4.0	.	.	X	.	.	
1	70	F	0.000	0.062	0.31	5.0	.	.	.	.	X	
1	71	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	72	F	0.000	0.062	0.50	8.0	0.004	.	.	.		
1	73	M	2.812	0.187	0.62	3.3	.	.	X	.	.	
1	74	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	
1	75	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	76	M	1.875	1.250	1.87	1.5	.	.	X	.	.	
1	77	M	3.125	0.125	1.75	14.0	1.777	.	.	.	.	
1	78	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	79	B	0.062	0.312	1.25	4.0	.	.	X	.	.	
1	80	B	0.062	0.500	3.75	7.5	.	.	X	.	.	
1	81	B	0.062	0.375	1.38	3.7	.	.	X	.	.	
1	82	F	0.000	0.062	2.50	40.0	.	.	X	.	.	
1	83	F	0.000	0.062	0.56	9.0	.	.	.	.	X	
1	84	C	0.062	0.625	1.87	3.0	.	.	X	.	.	
1	85	C	0.062	1.250	2.50	2.0	.	.	X	.	.	
1	86	C	0.062	1.875	5.00	2.7	.	.	X	.	.	
1	87	B	0.062	0.125	0.75	6.0	0.015	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-018

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Fati	X-Ray
1	88	F	0.000	0.062	0.94	15.0	.	.	.	.	X	
1	89	B	0.062	0.125	1.56	12.5	.	.	X	.	.	
1	90	C	0.062	0.312	0.62	2.0	.	.	X	.	.	
1	91	F	0.000	0.062	0.44	7.0	.	.	X	.	.	
1	92	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	93	B	0.062	0.312	1.25	4.0	0.063	.	.	.	.	
1	94	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	95	F	0.000	0.125	0.75	6.0	0.024	.	.	.	.	
1	96	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
1	97	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	98	M	0.625	0.062	0.62	10.0	0.063	.	.	.	.	
1	99	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	
1	100	F	0.000	0.062	0.94	15.0	.	.	X	.	.	
1	101	F	0.000	0.062	2.00	32.0	0.016	.	.	.	.	
1	102	F	0.000	0.062	1.63	26.0	0.013	.	.	.	.	
1	103	F	0.000	0.062	3.88	62.0	.	.	.	.	X	
1	104	F	0.000	0.062	0.37	6.0	.	.	.	.	X	
			Total Mass (Picogram)=				2.975	0.000				
			Total Count			=	47.	0.	25.	1.	11.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-018 TABLE PREPARATION DATE: 31-AUG-82

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	53.	804249.	9214.2	0.07 ± 0.02	1.10 ± 0.81	16.71 ±12.69
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	22.	333839.		0.08 ± 0.07	1.11 ± 0.88	15.65 ±13.71
	All Fiber	75.	1138088.		0.07 ± 0.04	1.10 ± 0.83	16.40 ±12.91
Bundle	Chrysotile	7.	106222.	5577.1	0.19 ± 0.07	1.71 ± 1.54	9.76 ± 8.11
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	6.	91047.		0.26 ± 0.16	1.56 ± 1.13	6.53 ± 3.
	All Bundle	13.	197269.		0.22 ± 0.12	1.64 ± 1.31	8.27 ± 6.37
Cluster	Chrysotile	5.	75873.	2417.7	0.16 ± 0.08	1.29 ± 0.44	9.40 ± 4.76
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	6.	91047.		0.85 ± 0.63	2.52 ± 1.47	3.98 ± 3.33
	All Cluster	11.	166920.		0.54 ± 0.58	1.96 ± 1.25	6.45 ± 4.75
Matrix	Chrysotile	2.	30349.	27933.5	0.09 ± 0.04	1.19 ± 0.80	12.00 ± 2.83
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	3.	45524.		0.50 ± 0.65	1.04 ± 0.72	4.94 ± 4.47
	All Matrix	5.	75873.		0.34 ± 0.51	1.10 ± 0.65	7.77 ± 5.19

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/A-4
Individual Grid Opening = 0.000066 Sq Cm
Number of Grid Openings = 1
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-018A 147-B-156 (cont.)

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	2	F	0.000	0.062	0.94	15.0	.	.	X	.	.	
1	3	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	4	F	0.000	0.062	1.81	29.0	0.014	.	.	.	.	
1	5	F	0.000	0.062	1.38	22.0	0.011	.	.	.	.	
1	6	F	0.000	0.125	0.94	7.5	0.030	.	.	.	.	
1	7	B	0.062	0.125	2.50	20.0	0.051	.	.	.	.	
1	8	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	9	M	0.625	0.062	0.62	10.0	0.063	.	.	.	.	
1	10	C	0.062	0.187	0.75	4.0	0.023	.	.	.	.	
1	11	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	12	C	0.062	0.187	2.19	11.7	0.067	.	.	.	.	
1	13	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	14	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	15	F	0.000	0.062	1.69	27.0	0.013	.	.	.	.	
1	16	F	0.000	0.062	1.50	24.0	0.012	.	.	.	.	
1	17	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	18	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	19	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	20	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
1	21	F	0.000	0.062	2.00	32.0	.	.	X	.	.	
1	22	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	23	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	24	C	0.062	0.125	1.38	11.0	0.028	.	.	.	.	
1	25	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
1	26	M	0.625	0.125	3.50	28.0	0.711	.	.	.	.	
1	27	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	28	F	0.000	0.062	1.63	26.0	0.013	.	.	.	.	
1	29	M	0.625	0.125	1.50	12.0	0.305	.	.	.	.	

ITT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-018A

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambis	Pol Asbe	No Pstt	X Ray
1	30	B	0.062	0.312	3.88	12.4	.	.	X	.	.	
1	31	F	0.000	0.062	1.31	21.0	0.010	.	.	.	.	
1	32	F	0.000	0.062	0.37	6.0	.	.	X	.	.	
1	33	F	0.000	0.125	0.94	7.5	0.030	.	.	.	.	
1	34	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	35	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
1	36	C	0.062	0.187	0.62	3.3	0.019	.	.	.	.	
1	37	C	0.062	0.250	0.75	3.0	0.030	.	.	.	.	
1	38	C	0.062	0.625	1.25	2.0	0.127	.	.	.	.	
1	39	M	1.250	0.312	2.19	7.0	2.222	.		.	.	
1	40	M	2.500	0.125	2.63	21.0	2.133	.	.	.	.	
1	41	C	0.062	1.250	2.50	2.0	.	.	X	.	.	
1	42	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	43	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
1	44	F	0.000	0.125	0.87	7.0	0.028	.	.	.	.	
1	45	F	0.000	0.062	0.37	6.0	.	.	.	X	.	
1	46	F	0.000	0.062	1.06	17.0	0.008	.	.	.	.	
1	47	F	0.000	0.062	0.75	12.0	0.006		.	.	.	
1	48	F	0.000	0.062	1.25	20.0	0.010		.	.	.	
1	49	M	0.937	0.437	1.25	2.9	.	.	X	.		
1	50	C	0.062	0.375	1.13	3.0		.	X	.	.	
			Total Mass (Picogram) =				6.092	0.000				
			Total Count =				42.	0.	7.	1.	0.	

(To provide the reader with the most complete data, the computer printouts are included. This is the best copy available; we regret the occasional undecipherable number.)

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-018A TABLE PREPARATION DATE: 31-AUG-82

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	30.	455235.	4758.4	0.07 ± 0.02	1.04 ± 0.37	15.83 ± 6.59
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	4.	60698.		0.06 ± 0.00	0.92 ± 0.77	14.75 ± 12.2
	All Fiber	34.	515933.		0.07 ± 0.02	1.02 ± 0.42	15.71 ± 7.2
Bundle	Chrysotile	1.	15175.	770.6	0.12 ± 0.00	2.50 ± 0.00	20.00 ± 0.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	1.	15175.		0.31 ± 0.00	3.88 ± 0.00	12.40 ± 0.00
	All Bundle	2.	30349.		0.22 ± 0.13	3.19 ± 0.97	16.20 ± 5.3
Cluster	Chrysotile	6.	91047.	4459.7	0.26 ± 0.18	1.16 ± 0.59	5.83 ± 4.3
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.0
	Other	2.	30349.		0.81 ± 0.62	1.81 ± 0.97	2.50 ± 0.7
	All Cluster	8.	121396.		0.40 ± 0.38	1.32 ± 0.69	5.00 ± 3.9
Matrix	Chrysotile	5.	75873.	82452.1	0.15 ± 0.09	2.09 ± 1.09	15.60 ± 8.66
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.0
	Other	1.	15175.		0.44 ± 0.00	1.25 ± 0.00	2.86 ± 0.00
	All Matrix	6.	91047.		0.20 ± 0.14	1.95 ± 1.04	13.48 ± 9.34

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/A-4
Individual Grid Opening = 0.000066 Sq Cm
Number of Grid Openings = 1
Film Magnification = 20000

(To provide the reader with the most complete data, the computer printouts are included. This is the best copy available; we regret the occasional undecipherable number.)

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-019 149-B-161

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambis	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	2.06	33.0	.	.	X	.	.	
1	2	B	0.062	0.125	0.62	5.0	0.013	.	.	.	.	
1	3	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	4	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	5	C	0.062	0.625	0.94	1.5	0.095	.	.	.	.	
1	6	B	0.062	0.125	0.50	4.0	.	.	X	.	.	
1	7	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	8	F	0.000	0.062	0.56	9.0	.	.	X	.	.	
1	9	F	0.000	0.062	2.56	41.0	0.020	.	.	.	.	
1	10	F	0.000	0.062	3.50	56.0	0.028	.	.	.	.	
1	11	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	12	C	0.062	0.125	0.75	6.0	.	.	X	.	.	
1	13	M	0.125	0.062	0.50	8.0	0.010	.	.	.	.	
1	14	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	15	F	0.000	0.062	3.44	55.0	0.027	.	.	.	.	
1	16	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	17	F	0.000	0.125	1.25	10.0	.	.	X	.	.	
1	18	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	19	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	20	F	0.000	0.062	0.75	12.0	.	.	X	.	.	
1	21	B	0.062	0.125	1.75	14.0	.	.	X	.	.	
1	22	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	23	B	0.062	0.125	2.63	21.0	0.053	.	.	.	.	
1	24	B	0.062	0.125	0.94	7.5	0.019	.	.	.	.	
1	25	F	0.000	0.062	0.31	5.0	.	.	.	.	.	
1	26	B	0.062	0.625	2.81	4.5	0.286	.	.	.	X	
1	27	F	0.000	0.062	1.25	20.0	.	.	.	.	.	
1	28	F	0.000	0.062	0.50	8.0	.	.	X	.	.	
1	29	F	0.000	0.125	1.19	9.5	0.038	.	X	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-019

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	30	C	0.062	1.250	5.62	4.5	1.143	.	.	.	.	
1	31	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	32	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	33	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
1	34	C	0.062	0.312	0.75	2.4	.	.	X	.	.	
1	35	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	36	M	0.937	0.062	0.50	8.0	.	.	X	.	.	
1	37	F	0.000	0.125	1.25	10.0	0.040	.	.	.	.	
1	38	F	0.000	0.062	5.62	90.0	0.045	.	.	.	.	
1	39	M	0.937	0.062	1.25	20.0	0.190	.	.	.	.	
1	40	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	41	F	0.000	0.062	1.06	17.0	0.008	.	.	.	.	
1	42	B	0.062	0.125	0.69	5.5	0.014	.	.	.	.	
1	43	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	44	F	0.000	0.062	1.44	23.0	0.011	.	.	.	.	
1	45	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
1	46	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	47	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	48	C	0.062	0.625	1.25	2.0	.	.	X	.	.	
1	49	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	50	M	0.750	0.062	0.50	8.0	0.061	.	.	.	.	
1	51	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	52	F	0.000	0.062	1.75	28.0	0.014	.	.	.	.	
1	53	B	0.062	0.125	1.25	10.0	0.025	.	.	.	.	
1	54	B	0.062	0.125	1.00	8.0	.	.	X	.	.	
1	55	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	56	F	0.000	0.062	3.00	48.0	0.024	.	.	.	.	
1	57	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
1	58	C	0.062	0.250	1.25	5.0	0.051	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-019

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	59	F	0.000	0.062	1.56	25.0	0.012	.	.	.	.	
1	60	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	61	M	0.625	0.125	0.75	6.0	0.152	.	.	.	.	
1	62	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
1	63	C	0.062	0.250	1.38	5.5	0.056	.	.	.	.	
1	64	F	0.000	0.062	1.75	28.0	0.014	.	.	.	.	
1	65	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	66	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	67	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	68	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
1	69	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
1	70	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	71	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
1	72	F	0.000	0.062	1.69	27.0	0.013	.	.	.	.	
1	73	M	0.437	0.062	1.38	22.0	0.098	.	.	.	.	
1	74	B	0.062	0.250	0.81	3.3	.	.	X	.	.	
1	75	B	0.062	0.312	0.75	2.4	.	.	X	.	.	
1	76	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
1	77	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	78	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	79	F	0.000	0.062	1.50	24.0	0.012	.	.	.	.	
1	80	M	3.125	0.625	1.25	2.0	.	.	X	.	.	
1	81	B	0.062	0.125	1.25	10.0	0.025	.	.	.	.	
1	82	B	0.062	0.312	0.75	2.4	0.038	.	.	.	.	
1	83	C	0.062	1.250	3.12	2.5	0.635	.	.	.	.	
1	84	B	0.062	0.625	5.94	9.5	0.603	.	.	.	.	
1	85	F	0.000	0.062	1.44	23.0	0.011	.	.	.	.	
1	86	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
1	87	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-019

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Fatt	X-Ray
1	88	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	89	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	90	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	91	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
1	92	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	93	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	94	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	95	F	0.000	0.062	0.81	13.0	.	.	X	.	.	
1	96	F	0.000	0.062	0.62	10.0	.	.	X	.	.	
1	97	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	98	F	0.000	0.062	1.06	17.0	0.008	.	.	.	.	
1	99	F	0.000	0.062	0.56	9.0	0.004	.	.	.		
1	100	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	101	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	102	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
			total mass (Picogram)=				4.179	0.000				
			total count			=	83.	0.	18.	0.	1.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-019 TABLE PREPARATION DATE: 31-AUG-82

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	64.	955366.	9131.3	0.06 ± 0.01	1.08 ± 0.90	17.04 ±14.41
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	9.	134348.		0.07 ± 0.02	0.90 ± 0.54	13.33 ± 8.46
	All Fiber	73.	1089715.		0.07 ± 0.01	1.06 ± 0.86	16.58 ±13.83
Bundle	Chrysotile	9.	134348.	16070.5	0.26 ± 0.22	1.87 ± 1.73	8.38 ± 5.14
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	5.	74638.		0.19 ± 0.09	0.96 ± 0.48	6.33 ± 4.80
	All Bundle	14.	208986.		0.23 ± 0.18	1.55 ± 1.45	7.65 ± 5.13
Cluster	Chrysotile	5.	74638.	29544.7	0.73 ± 0.50	2.46 ± 1.96	3.80 ± 1.72
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	3.	44783.		0.35 ± 0.25	0.92 ± 0.29	3.47 ± 2.20
	All Cluster	8.	119421.		0.59 ± 0.45	1.88 ± 1.69	3.68 ± 1.76
Matrix	Chrysotile	5.	74638.	7637.3	0.08 ± 0.03	0.87 ± 0.41	12.80 ± 7.52
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	2.	29855.		0.34 ± 0.40	0.87 ± 0.53	5.00 ± 4.24
	All Matrix	7.	104493.		0.15 ± 0.21	0.87 ± 0.40	10.57 ± 7.46

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/A-5
Individual Grid Opening = 0.000067 Sq Cm
Number of Grid Openings = 1
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-020 151-B-166

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Asbis	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	2	M	0.625	0.625	1.25	2.0	.	.	X	.	.	
1	3	C	0.062	0.187	0.62	3.3	.	.	X	.	.	
1	4	F	0.000	0.062	1.31	21.0	0.010	.	.	.	.	
1	5	F	0.000	0.062	0.81	13.0	.	.	X	.	.	
1	6	B	0.062	0.250	3.25	13.0	.	.	X	.	.	
1	7	F	0.000	0.062	1.31	21.0	0.010	.	.	.	.	
1	8	F	0.000	0.062	1.25	20.0	.	.	X	.	.	
1	9	F	0.000	0.062	1.87	30.0	.	.	X	.	.	
1	10	B	0.062	0.187	7.38	39.3	0.225	.	.	.	.	
1	11	F	0.000	0.062	0.44	7.0	.	.	X	.	.	
1	12	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	13	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	14	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	15	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	16	F	0.000	0.125	3.44	27.5	0.110	.	.	.	.	
1	17	B	0.062	0.187	1.31	7.0	.	.	X	.	.	
1	18	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	19	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
1	20	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	21	F	0.000	0.062	0.37	6.0	.	.	X	.	.	
1	22	F	0.000	0.062	0.37	6.0	.	.	X	.	.	
1	23	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	24	M	0.312	0.125	0.62	5.0	.	.	X	.	.	
1	25	B	0.062	0.312	2.19	7.0	0.111	.	.	.	.	
1	26	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	27	F	0.000	0.125	0.62	5.0	0.020	.	.	.	.	
1	28	F	0.000	0.062	0.56	9.0	.	.	X	.	.	
1	29	M	0.250	0.062	0.75	12.0	0.030	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-020

Grid Osn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	30	M	3.437	0.375	0.62	1.7	.	.	X	.	.	
1	31	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
1	32	C	0.062	0.187	0.62	3.3	0.019	.	.	.	.	
1	33	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	34	C	0.062	0.125	0.75	6.0	0.015	.	.	.	.	
1	35	F	0.000	0.125	5.31	42.5	0.170	.	.	.	.	
1	36	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
1	37	M	1.562	0.187	0.75	4.0	.	.	X	.	.	
1	38	F	0.000	0.062	3.12	50.0	0.025	.	.	.	.	
1	39	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
1	40	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	41	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
1	42	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	43	F	0.000	0.062	2.81	45.0	0.022	.	.	.	.	
1	44	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
1	45	M	0.625	0.062	1.87	30.0	0.190	.	.	.	.	
1	46	C	0.062	1.875	2.50	1.3	0.762	.	.	.	.	
1	47	F	0.000	0.062	1.75	28.0	0.014	.	.	.	.	
1	48	B	0.062	0.187	1.87	10.0	.	.	X	.	.	
1	49	F	0.000	0.062	1.44	23.0	0.011	.	.	.	.	
1	50	B	0.062	0.187	4.69	25.0	0.143	.	.	.	.	
1	51	F	0.000	0.062	0.31	5.0	.	.	X	.	.	
1	52	F	0.000	0.062	0.37	6.0	.	.	X	.	.	
1	53	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	54	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	55	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	56	C	0.062	0.250	0.62	2.5	.	.	X	.	.	
1	57	C	0.062	0.250	3.12	12.5	0.127	.	.	.	.	
1	58	F	0.000	0.062	1.63	26.0	0.013	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-020

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	59	C	0.062	0.187	0.94	5.0	.	.	X	.	.	
1	60	F	0.000	0.062	2.19	35.0	0.017	.	.	.	.	
1	61	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	62	F	0.000	0.062	1.50	24.0	0.012	.	.	.	.	
1	63	C	0.062	0.187	1.31	7.0	.	.	X	.	.	
1	64	B	0.062	0.125	1.31	10.5	0.027	.	.	.	.	
1	65	C	0.062	0.187	0.50	2.7	0.015	.	.	.	.	
1	66	B	0.062	0.437	4.81	11.0	.	.	X	.	.	
1	67	C	0.062	0.187	0.75	4.0	.	.	X	.	.	
1	68	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	69	B	0.062	0.125	0.62	5.0	0.013	.	.	.	.	
1	70	F	0.000	0.125	0.62	5.0	0.020	.	.	.	.	
1	71	M	0.750	0.062	0.50	8.0	.	.	X	.	.	
1	72	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
1	73	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	74	F	0.000	0.187	0.94	5.0	.	.	X	.	.	
1	75	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
1	76	B	0.062	0.437	6.87	15.7	.	.	X	.	.	
1	77	M	2.812	0.250	0.75	3.0	1.371	.	.	.	.	
1	78	F	0.000	0.062	0.56	9.0	.	.	X	.	.	
1	79	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	80	F	0.000	0.062	0.62	10.0	.	.	X	.	.	
1	81	F	0.000	0.062	2.06	33.0	0.016	.	.	.	.	
1	82	C	0.062	0.312	1.25	4.0	.	.	X	.	.	
1	83	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	84	B	0.062	0.312	2.19	7.0	0.111	.	.	.	.	
1	85	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	86	F	0.000	0.062	2.31	37.0	0.018	.	.	.	.	
1	87	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-020

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	88	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
1	89	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
1	90	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	91	F	0.000	0.062	0.56	9.0	.	.	X	.	.	
1	92	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	93	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	94	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	95	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
1	96	M	1.875	0.437	0.75	1.7	.	.	X	.	.	
1	97	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	98	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	99	M	1.562	0.062	3.44	55.0	0.873	.	.	.	.	
1	100	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
			Total Mass (Picogram)=				4.763	0.000				
			Total Count			=	70.	0.	30.	0.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-020 TABLE PREPARATION DATE: 31-AUG-82

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	55.	834218.	11085.3	0.07 ± 0.02	1.12 ± 0.92	16.47 ±11.15
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	13.	197179.		0.07 ± 0.03	0.70 ± 0.44	10.38 ± 7.17
	All Fiber	68.	1031397.		0.07 ± 0.02	1.04 ± 0.87	15.31 ±10.73
Bundle	Chrysotile	6.	91006.	9541.2	0.21 ± 0.09	3.06 ± 2.52	15.64 ±13.70
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	5.	75838.		0.30 ± 0.13	3.63 ± 2.27	11.34 ± 3.26
	All Bundle	11.	166844.		0.25 ± 0.11	3.32 ± 2.31	13.69 ±10.15
Cluster	Chrysotile	5.	75838.	14230.0	0.52 ± 0.76	1.50 ± 1.22	5.17 ± 4.44
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	6.	91006.		0.22 ± 0.05	0.92 ± 0.31	4.31 ± 1.56
	All Cluster	11.	166844.		0.36 ± 0.51	1.18 ± 0.86	4.70 ± 3.05
Matrix	Chrysotile	4.	60670.	37385.0	0.11 ± 0.09	1.70 ± 1.27	25.00 ±22.93
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	6.	91006.		0.30 ± 0.21	0.75 ± 0.26	3.73 ± 2.50
	All Matrix	10.	151676.		0.22 ± 0.20	1.13 ± 0.91	12.24 ±17.36

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/B-1
Individual Grid Opening = 0.000066 Sq Cm
Number of Grid Openings = 1
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-020A 151-B-166 (cont.)

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	0.62	10.0	.	.	X	.	.	
1	2	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	3	F	0.000	0.062	1.44	23.0	0.011	.	.	.	.	
1	4	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	5	M	1.250	0.062	1.25	20.0	0.254	.	.	.	.	
1	6	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	7	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	8	B	0.062	0.187	2.19	11.7	0.067	.	.	.	.	
1	9	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	10	B	0.062	0.187	0.62	3.3	0.019	.	.	.	.	
1	11	C	0.062	0.937	1.87	2.0	0.286	.	.	.	.	
1	12	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	13	F	0.000	0.062	1.38	22.0	.	.	X	.	.	
1	14	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	15	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	16	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	17	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	18	F	0.000	0.062	2.63	42.0	0.021	.	.	.	.	
1	19	M	5.000	0.625	1.87	3.0	.	.	X	.	.	
1	20	F	0.000	0.125	2.38	19.0	0.076	.	.	.	.	
1	21	B	0.062	1.562	5.00	3.2	.	.	X	.	.	
1	22	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	23	C	0.062	0.187	1.13	6.0	.	.	X	.	.	
1	24	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	25	C	0.062	0.625	5.00	8.0	0.508	.	.	.	.	
1	26	B	0.062	0.500	2.94	5.9	.	.	X	.	.	
1	27	M	1.875	1.250	1.25	1.0	.	.	X	.	.	
1	28	C	0.062	0.625	2.50	4.0	.	.	X	.	.	
1	29	C	0.062	0.250	3.75	15.0	.	.	X	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-020A

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	30	B	0.062	0.500	12.50	25.0	1.016	.	.	.	.	
1	31	M	3.125	0.500	1.38	2.8	5.586	.	.	.	.	
1	32	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
1	33	C	0.062	0.125	1.25	10.0	0.025	.	.	.	.	
1	34	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	35	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	36	F	0.000	0.062	1.56	25.0	0.012	.	.	.	.	
1	37	M	4.062	0.625	1.25	2.0	8.252	.	.	.	.	
1	38	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	39	M	2.500	0.125	1.56	12.5	1.270	.	.	.	.	
1	40	M	0.500	0.062	1.25	20.0	0.102	.	.	.	.	
1	41	F	0.000	0.062	1.44	23.0	0.011	.	.	.	.	
1	42	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	43	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
			Total Mass (Picogram)=				17.636	0.000				
			Total Count			=	34.	0.	9.	0.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-020A TABLE PREPARATION DATE: 31-AUG-82

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	23.	348855.	3833.7	0.07 ± 0.01	1.07 ± 0.60	16.26 ± 8.39
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	2.	30335.		0.06 ± 0.00	1.00 ± 0.53	16.00 ± 8.49
	All Fiber	25.	379190.		0.06 ± 0.01	1.06 ± 0.58	16.24 ± 8.22
Bundle	Chrysotile	3.	45503.	16704.4	0.29 ± 0.18	5.10 ± 6.45	13.33 ±10.93
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	2.	30335.		1.03 ± 0.75	3.97 ± 1.46	4.54 ± 1.88
	All Bundle	5.	75838.		0.59 ± 0.57	4.65 ± 4.66	9.82 ± 9.16
Cluster	Chrysotile	3.	45503.	12420.0	0.56 ± 0.41	2.71 ± 2.01	6.67 ± 4.11
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	3.	45503.		0.35 ± 0.24	2.46 ± 1.31	8.33 ± 5.86
	All Cluster	6.	91006.		0.46 ± 0.32	2.58 ± 1.52	7.50 ± 4.64
Matrix	Chrysotile	5.	75838.	234535.0	0.28 ± 0.27	1.34 ± 0.14	11.45 ± 8.84
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	2.	30335.		0.94 ± 0.44	1.56 ± 0.44	2.00 ± 1.41
	All Matrix	7.	106173.		0.46 ± 0.43	1.40 ± 0.24	8.75 ± 8.58

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/B-1
Individual Grid Opening = 0.000066 Sq Cm
Number of Grid Openings = 1
Film Magnification = 20000

(To provide the reader with the most complete data, the computer printouts are included. This is the best copy available; we regret the occasional undecipherable number.)

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-022 153-B-171

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	C	0.062	0.312	0.94	3.0	.	.	X	.	.	
1	2	M	0.437	0.062	0.62	10.0	.	.	X	.	.	
1	3	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	4	F	0.000	0.062	0.56	9.0	.	.	X	.	.	
1	5	M	0.750	0.062	0.87	14.0	0.107	.	.	.	.	
1	6	F	0.000	0.062	1.25	20.0	.	.	.	.	X	
1	7	F	0.000	0.125	0.94	7.5	0.030	.	.	.	.	
1	8	C	0.062	1.250	3.12	2.5	.	.	X	.	.	
1	9	M	3.750	0.375	0.62	1.7	.	.	.	.	X	
1	10	F	0.000	0.062	4.06	65.0	0.032	.	.	.	.	
1	11	F	0.000	0.062	5.31	85.0	0.042	.	.	.	.	
1	12	F	0.000	0.062	0.31	5.0	.	.	X	.	.	
1	13	F	0.000	0.062	0.50	8.0	.	.	X	.	.	
1	14	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	15	F	0.000	0.125	0.94	7.5	.	.	X	.	.	
1	16	F	0.000	0.125	0.50	4.0	0.016	.	.	.	.	
1	17	M	2.500	0.125	1.87	15.0	1.523	.	.	.	.	
1	18	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	19	F	0.000	0.062	2.00	32.0	0.016	.	.	.	.	
1	20	M	0.312	0.062	0.56	9.0	0.029	.	.	.	.	
1	21	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	22	B	0.062	0.125	1.19	9.5	0.024	.	.	.	.	
1	23	C	0.062	0.375	0.62	1.7	.	.	X	.	.	
1	24	C	0.062	0.625	1.25	2.0	.	.	X	.	.	
1	25	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	26	M	0.750	0.187	0.75	4.0	0.274	.	.	.	.	
1	27	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	28	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	29	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-022

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	30	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	31	F	0.000	0.062	0.25	4.0	.	.	X	.	.	
1	32	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	33	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	34	B	0.062	0.250	1.25	5.0	.	.	X	.	.	
1	35	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	36	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	37	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	38	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	39	M	0.625	0.062	0.94	15.0	0.095	.	.	.	.	
1	40	B	0.062	0.125	2.81	22.5	0.057	.	.	.	.	
1	41	F	0.000	0.062	2.69	43.0	0.021	.	.	.	.	1,20,1,B,1
1	42	B	0.062	0.062	1.25	20.0	0.013	.	.	.	.	
1	43	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
1	44	F	0.000	0.062	1.38	22.0	.	.	X	.	.	
1	45	C	0.062	0.062	1.25	20.0	.	.	X	.	.	
1	46	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	47	F	0.000	0.062	0.62	10.0	.	.	X	.	.	
1	48	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	49	B	0.062	0.125	0.94	7.5	0.019	.	.	.	.	
1	50	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	51	C	0.062	0.312	1.25	4.0	0.063	.	.	.	.	
1	52	C	0.062	0.125	1.13	9.0	.	.	X	.	.	
1	53	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	54	M	0.937	0.250	1.00	4.0	0.669	.	.	.	.	
1	55	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	56	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	57	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
1	58	M	0.312	0.125	0.75	6.0	0.076	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-022

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	59	F	0.000	0.062	0.31	5.0	.	.	.	.	X	
1	60	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	61	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	62	F	0.000	0.125	0.62	5.0	0.020	.	.	.	.	
1	63	F	0.000	0.062	0.62	10.0	.	.	.	.	X	
1	64	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
1	65	C	0.062	0.375	1.25	3.3	.	.	X	.	.	
1	66	M	1.875	0.375	0.94	2.5	.	.	X	.	.	
1	67	F	0.000	0.062	1.13	18.0	.	.	.	.	X	
1	68	F	0.000	0.062	0.37	6.0	.	.	X	.	.	
1	69	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	70	F	0.000	0.062	1.94	31.0	.	.	.	.	X	
1	71	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	72	B	0.062	0.187	1.87	10.0	0.057	.	.	.	.	
1	73	F	0.000	0.062	0.44	7.0	.	.	.	.	X	
1	74	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	75	F	0.000	0.062	0.62	10.0	.	.	X	.	.	
1	76	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	77	F	0.000	0.062	1.56	25.0	0.012	.	.	.	.	
1	78	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	79	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	80	F	0.000	0.062	0.56	9.0	.	.	X	.	.	
1	81	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	82	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	83	M	1.562	0.187	2.06	11.0	1.571	.	.	.	.	
1	84	F	0.000	0.062	2.00	32.0	0.016	.	.	.	.	
1	85	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	86	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
1	87	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-92

SAMPLE CODE: C06545-022

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	88	F	0.000	0.062	1.50	24.0	0.012	.	.	.	.	
1	89	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	90	F	0.000	0.062	1.31	21.0	0.010	.	.	.	.	
1	91	C	0.062	0.312	0.69	2.2	.	.	X	.	.	
1	92	B	0.062	0.250	4.37	17.5	0.178	.	.	.	.	
1	93	F	0.000	0.062	1.56	25.0	0.012	.	.	.	.	
1	94	C	0.062	0.250	0.62	2.5	0.025	.	.	.	.	
1	95	M	0.500	0.125	0.50	4.0	0.081	.	.	.	.	
1	96	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	97	B	0.062	0.250	2.75	11.0	.	.	X	.	.	
1	98	B	0.062	0.937	13.13	14.0	2.000	.	.	.	.	
1	99	C	0.062	0.625	3.75	6.0	.	.	X	.	.	
1	100	F	0.000	0.062	1.69	27.0	0.013	.	.	.	.	
			Total Mass (Picogram)=				7.278	0.000				
			Total Count			=	70.	0.	23.	0.	7.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-022 TABLE PREPARATION DATE: 31-AUG-82

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	52.	776235.	7099.6	0.07 ± 0.01	1.03 ± 0.91	16.13 ±14.65
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	16.	238842.		0.07 ± 0.02	0.74 ± 0.47	11.34 ± 7.56
	All Fiber	68.	1015077.		0.07 ± 0.01	0.96 ± 0.83	15.00 ±13.42
Bundle	Chrysotile	7.	104493.	35040.5	0.26 ± 0.30	3.65 ± 4.35	14.43 ± 5.74
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	2.	29855.		0.25 ± 0.00	2.00 ± 1.06	8.00 ± 4.24
	All Bundle	9.	134348.		0.26 ± 0.26	3.28 ± 3.85	13.00 ± 5.92
Cluster	Chrysotile	2.	29855.	1326.6	0.28 ± 0.04	0.94 ± 0.44	3.25 ± 1.06
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	9.	134348.		0.45 ± 0.35	1.56 ± 1.10	5.52 ± 5.92
	All Cluster	11.	164204.		0.42 ± 0.32	1.44 ± 1.03	5.11 ± 5.39
Matrix	Chrysotile	9.	134348.	65172.7	0.13 ± 0.07	1.03 ± 0.56	9.11 ± 4.81
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	3.	44783.		0.27 ± 0.18	0.73 ± 0.18	4.72 ± 4.59
	All Matrix	12.	179131.		0.17 ± 0.11	0.96 ± 0.50	8.01 ± 4.96

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/B-3
Individual Grid Opening = 0.000067 Sq Cm
Number of Grid Openings = 1
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-022A 153-B-171 (cont.)

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	B	0.062	0.250	3.00	12.0	0.122	.	.	.	.	
1	2	F	0.000	0.062	1.31	21.0	0.010	.	.	.	.	
1	3	C	0.062	1.250	3.44	2.8	.	.	X	.	.	
1	4	C	0.062	0.625	3.12	5.0	.	.	X	.	.	
1	5	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	6	F	0.000	0.062	0.31	5.0	.	.	X	.	.	
1	7	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	8	F	0.000	0.062	1.25	20.0	.	.	X	.	.	
1	9	F	0.000	0.062	2.19	35.0	0.017	.	.	.	.	
1	10	F	0.000	0.062	1.06	17.0	0.008	.	.	.	.	
1	11	F	0.000	0.125	0.75	6.0	0.024	.	.	.	.	
1	12	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
1	13	F	0.000	0.125	0.94	7.5	0.030	.	.	.	.	
1	14	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
1	15	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	16	M	1.250	0.250	1.87	7.5	1.523	.	.	.	.	
1	17	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	18	C	0.062	0.187	2.50	13.3	0.076	.	.	.	.	
1	19	F	0.000	0.062	1.31	21.0	0.010	.	.	.	.	
1	20	F	0.000	0.062	0.69	11.0	.	.	X	.	.	
1	21	C	0.062	0.625	1.87	3.0	.	.	X	.	.	
1	22	F	0.000	0.062	1.38	22.0	0.011	.	.	.	.	
1	23	F	0.000	0.062	2.19	35.0	0.017	.	.	.	.	
1	24	F	0.000	0.125	2.00	16.0	.	.	X	.	.	
1	25	C	0.062	0.250	1.25	5.0	0.051	.	.	.	.	
1	26	C	0.062	2.500	2.50	1.0	1.016	.	.	.	.	
1	27	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	28	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	29	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-022A

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	30	B	0.062	0.500	6.25	12.5	.	.	X	.	.	
1	31	F	0.000	0.062	2.38	38.0	0.019	.	.	.	.	
1	32	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	33	C	0.062	0.187	1.13	6.0	0.034	.	.	.	.	
1	34	M	3.125	0.062	0.94	15.0	0.476	.	.	.	.	
1	35	B	0.062	0.125	5.00	40.0	.	.	X	.	.	
1	36	M	0.625	0.187	1.25	6.7	.	.	X	.	.	
1	37	F	0.000	0.062	2.19	35.0	0.017	.	.	.	.	
1	38	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
1	39	F	0.000	0.062	1.38	22.0	0.011	.	.	.	.	
1	40	F	0.000	0.125	1.31	10.5	0.042	.	.	.	.	
1	41	F	0.000	0.062	1.31	21.0	0.010	.	.	.	.	
1	42	B	0.062	0.187	2.63	14.0	0.080	.	.	.	.	
1	43	B	0.062	0.187	2.25	12.0	.	.	X	.	.	
1	44	F	0.000	0.062	1.75	28.0	0.014	.	.	.	.	
1	45	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	46	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	47	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
1	48	F	0.000	0.062	1.75	28.0	0.014	.	.	.	.	
1	49	B	0.062	0.250	5.00	20.0	0.203	.	.	.	.	
1	50	C	0.062	2.500	3.75	1.5	.	.	X	.	.	
1	51	C	0.062	1.250	3.75	3.0	.	.	X	.	.	
1	52	C	0.062	2.500	3.12	1.2	.	.	X	.	.	
1	53	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	54	F	0.000	0.062	0.62	10.0	.	.	X	.	.	
1	55	B	0.062	0.125	1.69	13.5	.	.	X	.	.	
1	56	B	0.062	0.187	4.81	25.7	0.147	.	.	.	.	
1	57	C	0.062	0.312	1.87	6.0	0.095	.	.	.	.	
1	58	B	0.062	0.187	2.50	13.3	.	.	X	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-022A

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	59	B	0.062	0.437	2.19	5.0	.	.	X	.	.	
1	60	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	61	F	0.000	0.062	1.50	24.0	0.012	.	.	.	.	
1	62	C	0.062	1.875	4.06	2.2	1.238	.	.	.	.	
1	63	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
1	64	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
			Total Mass (Picogram)=				5.442	0.000				
			Total Count			=	46.	0.	18.	0.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-022A TABLE PREPARATION DATE: 31-AUG-82

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	34.	507538.	5685.6	0.07 ± 0.02	1.14 ± 0.56	17.53 ± 9.40
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	5.	74638.		0.08 ± 0.03	0.98 ± 0.67	12.40 ± 5.77
	All Fiber	39.	582176.		0.07 ± 0.02	1.12 ± 0.57	16.87 ± 9.13
Bundle	Chrysotile	4.	59710.	8234.2	0.22 ± 0.04	3.86 ± 1.22	17.92 ± 6.18
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	6.	89566.		0.26 ± 0.16	3.31 ± 1.85	16.06 ±12.15
	All Bundle	10.	149276.		0.24 ± 0.13	3.53 ± 1.58	16.80 ± 9.78
Cluster	Chrysotile	6.	89566.	37466.2	0.89 ± 1.03	2.22 ± 1.08	5.58 ± 4.32
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	6.	89566.		1.46 ± 0.85	3.18 ± 0.70	2.75 ± 1.34
	All Cluster	12.	179131.		1.17 ± 0.95	2.70 ± 1.00	4.17 ± 3.39
Matrix	Chrysotile	2.	29855.	29847.9	0.16 ± 0.13	1.41 ± 0.66	11.25 ± 5.30
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	1.	14928.		0.19 ± 0.00	1.25 ± 0.00	6.67 ± 0.00
	All Matrix	3.	44783.		0.17 ± 0.10	1.35 ± 0.48	9.72 ± 4.59

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/B-3
Individual Grid Opening = 0.000067 Sq Cm
Number of Grid Openings = 1
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-023 155-B-176

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambis	Not Asbe	No Patt	X-Ray
1	1	C	0.062	0.125	0.62	5.0	.	.	X	.	.	
1	2	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
1	3	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	4	F	0.000	0.062	0.62	10.0	.	.	X	.	.	
1	5	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	6	M	3.125	1.250	1.25	1.0	.	.	X	.	.	
1	7	B	0.062	0.125	1.25	10.0	0.025	.	.	.	.	
1	8	M	0.312	0.125	0.75	6.0	0.076	.	.	.	.	
1	9	C	0.062	0.250	0.50	2.0	.	.	X	.	.	
1	10	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	11	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	12	F	0.000	0.125	1.13	9.0	0.036	.	.	.	.	
1	13	F	0.000	0.062	0.87	14.0	.	.	X	.	.	
1	14	B	0.062	0.625	5.00	8.0	.	.	X	.	.	
1	15	B	0.062	0.312	2.63	8.4	.	.	X	.	.	
1	16	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	17	C	0.062	2.500	8.12	3.3	.	.	X	.	.	
1	18	F	0.000	0.062	1.31	21.0	.	.	X	.	.	
1	19	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	20	B	0.062	0.187	3.12	16.7	.	.	X	.	.	
1	21	F	0.000	0.062	2.25	36.0	0.018	.	.	.	.	
1	22	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	23	C	0.062	0.250	0.62	2.5	.	.	X	.	.	
1	24	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
1	25	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	26	C	0.062	0.187	0.62	3.3	.	.	X	.	.	
1	27	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	28	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	29	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-023

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Pstt	X-Ray
1	30	F	0.000	0.062	1.25	20.0	.	.	X	.	.	
1	31	B	0.062	0.312	1.38	4.4	.	.	X	.	.	
1	32	M	0.500	0.125	1.25	10.0	.	.	X	.	.	
1	33	M	1.562	0.125	4.06	32.5	2.063	.	.	.	.	
1	34	B	0.062	0.625	5.94	9.5	0.603	.	.	.	.	
1	35	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	36	C	0.062	1.250	3.75	3.0	.	.	X	.	.	
1	37	F	0.000	0.062	1.94	31.0	0.015	.	.	.	.	
1	38	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
1	39	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	40	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	41	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	42	F	0.000	0.062	1.06	17.0	0.008	.	.	.	.	
1	43	F	0.000	0.062	1.31	21.0	0.010	.	.	.	.	
1	44	F	0.000	0.062	1.25	20.0	.	.	X	.	.	
1	45	F	0.000	0.062	1.75	28.0	0.014	.	.	.	.	
1	46	F	0.000	0.062	1.13	18.0	.	.	X	.	.	
1	47	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
1	48	F	0.000	0.062	1.75	28.0	0.014	.	.	.	.	
1	49	C	0.062	0.187	1.87	10.0	0.057	.	.	.	.	
1	50	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	
1	51	F	0.000	0.125	0.50	4.0	.	.	X	.	.	
1	52	F	0.000	0.062	1.06	17.0	0.008	.	.	.	.	
1	53	F	0.000	0.062	1.31	21.0	0.010	.	.	.	.	
1	54	M	1.875	0.125	2.56	20.5	1.562	.	.	.	.	
1	55	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	56	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
1	57	F	0.000	0.062	1.13	18.0	.	.	X	.	.	
1	58	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-023

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Fstt	X-Ray
1	59	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	60	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	61	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	62	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	63	F	0.000	0.062	1.38	22.0	0.011	.	.	.	.	
1	64	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
1	65	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
1	66	F	0.000	0.062	2.56	41.0	.	.	X	.	.	
1	67	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	68	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	69	F	0.000	0.062	0.56	9.0	.	.	X	.	.	
1	70	F	0.000	0.062	0.44	7.0	.	.	X	.	.	
1	71	F	0.000	0.062	0.31	5.0	.	.	X	.	.	
1	72	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
1	73	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
1	74	F	0.000	0.125	1.25	10.0	.	.	X	.	.	
1	75	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	76	F	0.000	0.125	1.25	10.0	.	.	X	.	.	
1	77	F	0.000	0.062	0.69	11.0	.	.	X	.	.	
1	78	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	79	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
1	80	M	0.437	0.062	1.13	18.0	0.080	.	.	.	.	
1	81	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	82	F	0.000	0.062	1.75	28.0	0.014	.	.	.	.	
1	83	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
1	84	C	0.062	0.125	0.87	7.0	.	.	X	.	.	
1	85	B	0.062	0.250	2.50	10.0	.	.	X	.	.	
1	86	B	0.062	0.250	1.87	7.5	.	.	X	.	.	
1	87	F	0.000	0.062	2.19	35.0	0.017	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-023

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Fatl	X-Ray
1	88	F	0.000	0.062	1.06	17.0	.	.	X	.	.	
1	89	C	0.062	0.125	0.62	5.0	.	.	X	.	.	
			Total Mass (Picogram)=				4.870	0.000				
			Total Count			=	57.	0.	32.	0.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-023 TABLE PREPARATION DATE: 31-AUG-02

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	50.	832640.	6724.6	0.06 ± 0.01	0.94 ± 0.48	14.94 ± 7.7:
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	16.	266445.		0.07 ± 0.03	1.01 ± 0.54	14.69 ± 8.93
	All Fiber	66.	1099084.		0.07 ± 0.02	0.96 ± 0.49	14.88 ± 7.9:
Bundle	Chrysotile	2.	33306.	10464.9	0.37 ± 0.35	3.59 ± 3.31	9.75 ± 0.35
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	6.	99917.		0.32 ± 0.16	2.75 ± 1.26	9.16 ± 4.1:
	All Bundle	8.	133222.		0.34 ± 0.19	2.96 ± 1.69	9.31 ± 3.49
Cluster	Chrysotile	1.	16653.	951.4	0.19 ± 0.00	1.87 ± 0.00	10.00 ± 0.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	8.	133222.		0.60 ± 0.86	1.97 ± 2.72	3.89 ± 1.65
	All Cluster	9.	149875.		0.56 ± 0.81	1.96 ± 2.54	4.56 ± 2.5:
Matrix	Chrysotile	4.	66611.	62958.6	0.11 ± 0.03	2.13 ± 1.51	19.25 ±10.87
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	2.	33306.		0.69 ± 0.80	1.25 ± 0.00	5.50 ± 6.36
	All Matrix	6.	99917.		0.30 ± 0.47	1.83 ± 1.25	14.67 ±11.37

Sample Collection and Preparation Data

Air Volume	=	1.00 Cu M
Deposit Area	=	1.00 Sq Cm
Ashed Area	=	1.00 Sq Cm
Redeposit Area	=	1.00 Sq Cm

Grid Data

Grid ID:		052182/B-4
Individual Grid Opening	=	0.000080 Sq Cm
Number of Grid Openings	=	1
Film Magnification	=	20000

(To provide the reader with the most complete data, the computer printouts are included. This is the best copy available; we regret the occasional undecipherable number.)

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-024 157-B-181

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	B	0.062	0.312	4.06	13.0	0.206	.	.	.	.	
1	2	F	0.000	0.062	1.56	25.0	.	.	X	.	.	
1	3	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	4	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
1	5	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	6	F	0.000	0.125	1.25	10.0	.	.	X	.	.	
1	7	C	0.062	0.125	0.62	5.0	0.013	.	.	.	.	
1	8	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	9	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	10	F	0.000	0.062	0.56	9.0	.	.	X	.	.	
1	11	C	0.062	0.125	1.56	12.5	0.032	.	.	.	.	
1	12	F	0.000	0.062	1.31	21.0	0.010	.	.	.	.	
1	13	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	14	B	0.062	0.250	1.87	7.5	.	.	X	.	.	
1	15	F	0.000	0.062	1.31	21.0	0.010	.	.	.	.	
1	16	F	0.000	0.125	2.38	19.0	0.076	.	.	.	.	
1	17	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	18	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	19	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	20	F	0.000	0.062	1.56	25.0	.	.	X	.	.	
1	21	F	0.000	0.125	1.25	10.0	.	.	X	.	.	
1	22	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	23	M	0.625	0.062	1.13	18.0	0.114	.	.	.	.	
1	24	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
1	25	C	0.062	0.187	1.25	6.7	.	.	X	.	.	
1	26	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	27	F	0.000	0.062	1.25	20.0	.	.	X	.	.	
1	28	F	0.000	0.062	1.38	22.0	0.011	.	.	.	.	
1	29	F	0.000	0.125	0.75	6.0	0.024	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-024

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X Ray
1	30	F	0.000	0.125	1.19	9.5	.	.	X	.	.	
1	31	F	0.000	0.062	3.00	48.0	0.024	.	.	.	.	
1	32	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	33	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	34	F	0.000	0.125	0.75	6.0	0.024	.	.	.	.	
1	35	F	0.000	0.062	5.13	82.0	0.041	.	.	.	.	
1	36	F	0.000	0.062	1.00	16.0	0.008	.	X	.	.	
1	37	F	0.000	0.062	1.87	30.0	.	.	X	.	.	
1	38	B	0.062	0.500	0.94	1.9	.	.	.	.	.	
1	39	F	0.000	0.062	1.31	21.0	0.010	.	X	.	.	
1	40	C	0.062	0.250	0.50	2.0	.	.	X	.	.	
1	41	M	3.125	0.687	1.87	2.7	.	.	.	.	.	
1	42	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	43	F	0.000	0.062	3.38	54.0	0.027	.	.	.	.	
1	44	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	45	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	46	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	47	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	48	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	49	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	50	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
1	51	F	0.000	0.062	1.13	18.0	.	.	X	.	.	
1	52	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	53	F	0.000	0.062	0.44	7.0	.	.	.	.	X	
1	54	F	0.000	0.062	1.38	22.0	0.011	.	.	.	.	
1	55	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	56	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
1	57	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	58	B	0.062	0.312	1.87	6.0	.	.	X	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-024

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Lensth	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambis	Not Asbe	No Patt	X-Ray
1	59	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
1	60	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	61	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	62	C	0.062	0.187	5.00	26.7	0.152	.	.	.	.	
1	63	M	0.312	0.187	0.62	3.3	.	.	X	.	.	
1	64	M	1.875	1.250	1.25	1.0	.	.	X	.	.	
1	65	M	1.250	0.187	1.25	6.7	.	.	X	.	.	
1	66	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	67	B	0.062	0.125	0.94	7.5	.	.	X	.	.	
1	68	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	69	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	70	F	0.000	0.062	1.38	22.0	0.011	.	.	.	.	
1	71	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	72	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
1	73	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	74	F	0.000	0.062	0.69	11.0	.	.	X	.	.	
1	75	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	76	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	77	F	0.000	0.062	0.56	9.0	.	.	.	.	X	
1	78	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	79	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	80	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
1	81	F	0.000	0.062	0.62	10.0	.	.	X	.	.	
1	82	F	0.000	0.125	1.56	12.5	0.050	.	.	.	.	
1	83	F	0.000	0.062	2.63	42.0	.	.	X	.	.	
1	84	F	0.000	0.062	2.31	37.0	0.018	.	.	.	.	
1	85	F	0.000	0.062	1.00	16.0	.	.	X	.	.	
1	86	F	0.000	0.062	0.37	6.0	.	.	X	.	.	
1	87	B	0.062	0.187	4.37	23.3	0.133	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-024

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	88	C	0.062	0.250	1.13	4.5	.	.	X	.	.	
1	89	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	90	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	91	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	92	B	0.062	0.187	3.00	16.0	.	.	X	.	.	
1	93	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	94	F	0.000	0.125	1.75	14.0	0.056	.	.	.	.	
1	95	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
1	96	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
1	97	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	98	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	99	B	0.062	0.250	1.25	5.0	0.051	.	.	.	.	
1	100	B	0.062	0.125	0.94	7.5	0.019	.	.	.	.	
1	101	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	102	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	103	F	0.000	0.062	0.31	5.0	.	.	X	.	.	
1	104	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	105	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
1	106	F	0.000	0.062	1.50	24.0	0.012	.	.	.	.	
1	107	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
1	108	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	109	B	0.062	0.125	1.38	11.0	.	.	X	.	.	
1	110	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	111	B	0.062	0.125	1.00	8.0	.	.	X	.	.	
1	112	F	0.000	1.250	7.19	5.8	.	.	.	.	X	
1	113	B	0.062	0.625	3.75	6.0	.	.	X	.	.	
1	114	B	0.062	0.312	4.06	13.0	.	.	X	.	.	
1	115	C	0.062	1.250	6.87	5.5	.	.	X	.	.	
1	116	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-024

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	117	B	0.062	0.500	0.75	1.5	0.061	.	.	.	.	
1	118	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	119	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	120	F	0.000	0.062	1.44	23.0	0.011	.	.	.	.	
1	121	F	0.000	0.062	0.44	7.0	.	.	X	.	.	
1	122	M	2.187	0.250	0.62	2.5	.	.	X	.	.	
1	123	B	0.062	0.750	3.75	5.0	0.457	.	.	.	.	
			Total Mass (Picogram)=				1.980	0.000				
			Total Count			=	86.	0.	34.	0.	3.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-024 TABLE PREPARATION DATE: 31-AUG-82

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	76.	1134498.	11073.6	0.07 ± 0.02	0.94 ± 0.75	14.28 ±11.65
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.06
	Other	19.	283624.		0.13 ± 0.27	1.36 ± 1.53	14.49 ± 9.92
	All Fiber	95.	1418122.		0.08 ± 0.12	1.02 ± 0.96	14.32 ±11.25
Bundle	Chrysotile	6.	89566.	13843.7	0.35 ± 0.23	2.52 ± 1.71	9.22 ± 7.89
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	9.	134348.		0.28 ± 0.18	2.09 ± 1.22	8.54 ± 4.20
	All Bundle	15.	223914.		0.31 ± 0.20	2.26 ± 1.39	8.81 ± 5.7[illegible]
Cluster	Chrysotile	3.	44783.	2937.4	0.15 ± 0.04	2.40 ± 2.30	14.72 ±11.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	4.	59710.		0.48 ± 0.51	2.44 ± 2.98	4.87 ± 1.99
	All Cluster	7.	104493.		0.34 ± 0.40	2.42 ± 2.49	8.98 ± 8.44
Matrix	Chrysotile	1.	14928.	1705.6	0.06 ± 0.00	1.13 ± 0.00	18.00 ± 0.0[illegible]
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	5.	74638.		0.51 ± 0.46	1.13 ± 0.52	3.25 ± 2.10
	All Matrix	6.	89566.		0.44 ± 0.45	1.13 ± 0.47	5.70 ± 6.3[illegible]

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/B-5
Individual Grid Opening = 0.000067 Sq Cm
Number of Grid Openings = 1
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-027 159-B -187

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	2	F	0.000	0.062	0.25	4.0	.	.	X	.	.	
1	3	F	0.000	0.062	0.87	14.0	.	.	X	.	.	
1	4	B	0.062	0.250	2.19	8.7	0.089	.	.	.	.	
1	5	F	0.000	0.062	0.62	10.0	.	.	X	.	.	
1	6	F	0.000	0.062	1.31	21.0	0.010	.	.	.	.	
1	7	F	0.000	0.062	3.75	60.0	0.030	.	.	.	.	
1	8	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	9	B	0.062	0.750	3.12	4.2	.	.	X	.	.	
1	10	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	11	M	5.000	2.500	3.12	1.2	.	.	X	.	.	
1	12	F	0.000	0.062	2.38	38.0	0.019	.	.	.	.	
1	13	B	0.062	0.187	0.50	2.7	.	.	X	.	.	
1	14	F	0.000	0.062	2.19	35.0	0.017	.	.	.	.	
1	15	F	0.000	0.062	1.50	24.0	0.012	.	.	.	.	
1	16	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	17	B	0.062	0.125	1.31	10.5	0.027	.	.	.	.	
1	18	C	0.062	0.500	1.25	2.5	.	.	X	.	.	
1	19	C	0.062	0.312	0.94	3.0	0.048	.	.	.	.	
1	20	F	0.000	0.125	0.62	5.0	0.020	.	.	.	.	
1	21	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	22	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	23	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
1	24	B	0.062	0.250	2.50	10.0	0.102	.	.	.	.	
1	25	B	0.062	0.250	3.19	12.8	0.129	.	.	.	.	
1	26	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	27	M	3.437	0.625	0.94	1.5	.	.	X	.	.	
1	28	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	29	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-027

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Rstio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	30	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	31	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	32	F	0.000	0.062	0.62	10.0	.	.	X	.	.	
1	33	F	0.000	0.062	3.81	61.0	0.030	.	.	.	.	
1	34	F	0.000	0.062	1.25	20.0	.	.	X	.	.	
1	35	M	1.250	0.187	0.94	5.0	0.571	.	.	.	.	
1	36	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
1	37	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	38	F	0.000	0.062	1.13	18.0	.	.	X	.	.	
1	39	M	1.875	0.187	0.31	1.7	.	.	X	.	.	
1	40	F	0.000	0.125	2.50	20.0	0.080	.	.	.	.	
1	41	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	42	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	43	M	0.250	0.062	0.31	5.0	.	.	X	.	.	
1	44	C	0.062	0.625	1.87	3.0	.	.	X	.	.	
1	45	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	46	C	0.062	0.625	1.25	2.0	.	.	X	.	.	
1	47	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	48	M	2.500	0.250	1.25	5.0	.	.	X	.	.	
1	49	M	1.250	0.125	0.62	5.0	0.254	.	.	.	.	
1	50	M	1.562	0.187	1.13	6.0	0.857	.	.	.	.	
1	51	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
1	52	C	0.062	0.125	1.25	10.0	.	.	X	.	.	
1	53	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	54	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
1	55	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
1	56	F	0.000	0.125	0.62	5.0	0.020	.	.	.	.	
1	57	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	58	M	0.312	0.062	0.94	15.0	.	.	X	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-027

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	59	F	0.000	0.125	1.75	14.0	0.056	.	.	.	.	
1	60	C	0.062	0.125	1.25	10.0	.	.	X	.	.	
1	61	F	0.000	0.062	1.31	21.0	.	.	X	.	.	
1	62	B	0.062	0.187	5.62	30.0	.	.	X	.	.	
1	63	F	0.000	0.062	2.19	35.0	.	.	X	.	.	
1	64	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	65	B	0.062	0.625	3.44	5.5	0.349	.	.	.	.	
1	66	F	0.000	0.062	3.63	58.0	0.029	.	.	.	.	
1	67	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	68	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	69	M	0.500	0.312	0.94	3.0	.	.	X	.	.	
1	70	C	0.062	0.250	2.19	8.7	.	.	X	.	.	
1	71	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	72	C	0.062	1.250	1.38	1.1	0.279	.	.	.	.	
1	73	M	0.625	0.062	1.50	24.0	0.152	.	.	.	.	
1	74	F	0.000	0.125	1.13	9.0	0.036	.	.	.	.	
1	75	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	76	F	0.000	0.062	3.81	61.0	0.030	.	.	.	.	
1	77	B	0.062	0.125	1.38	11.0	0.028	.	.	.	.	
1	78	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	79	B	0.062	0.187	0.87	4.7	.	.	X	.	.	
1	80	B	0.062	0.187	1.13	6.0	.	.	X	.	.	
1	81	F	0.000	0.062	1.31	21.0	0.010	.	.	.	.	
1	82	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
1	83	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
1	84	F	0.000	0.062	1.44	23.0	0.011	.	.	.	.	
1	85	F	0.000	0.062	2.00	32.0	0.016	.	.	.	.	
1	86	F	0.000	0.062	1.31	21.0	0.010	.	.	.	.	
1	87	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545 027

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	88	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	89	C	0.062	0.250	1.87	7.5	0.076	.	.	.	.	
1	90	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	91	B	0.062	1.875	20.00	10.7	6.094	.	.	.	.	
1	92	F	0.000	0.062	0.56	9.0	.	.	X	.	.	
1	93	F	0.000	0.062	2.38	38.0	.	.	X	.	.	
1	94	B	0.062	0.125	0.69	5.5	.	.	X	.	.	
1	95	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	96	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	97	M	0.750	0.125	1.25	10.0	0.305	.	.	.	.	
1	98	F	0.000	0.062	1.56	25.0	.	.	X	.	.	
1	99	B	0.062	0.125	0.94	7.5	0.019	.	.	.	.	
1	100	F	0.000	0.062	3.19	51.0	0.025	.	.	.	.	
			Total Mass (Picogram)=				10.039	0.000				
			Total Count =				70.	0.	30.	0.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: L06545-027 TABLE PREPARATION DATE: 31-AUG-82

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	54.	781137.	9548.1	0.07 ± 0.02	1.16 ± 0.95	17.65 ±15.05
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	11.	159121.		0.06 ± 0.00	1.16 ± 0.68	18.55 ±10.8[illegible]
	All Fiber	65.	940258.		0.07 ± 0.02	1.16 ± 0.91	17.80 ±14.35
Bundle	Chrysotile	8.	115724.	98892.3	0.45 ± 0.60	4.37 ± 6.38	9.58 ± 2.23
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	6.	86793.		0.27 ± 0.24	1.99 ± 2.02	8.83 ±10.43
	All Bundle	14.	202517.		0.37 ± 0.47	3.35 ± 5.00	9.26 ± 6.69
Cluster	Chrysotile	3.	43397.	5830.7	0.60 ± 0.56	1.40 ± 0.47	3.87 ± 3.29
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	6.	86793.		0.37 ± 0.24	1.51 ± 0.42	6.04 ± 3.92
	All Cluster	9.	130190.		0.45 ± 0.36	1.47 ± 0.41	5.32 ± 3.6[illegible]
Matrix	Chrysotile	5.	72328.	30944.0	0.14 ± 0.05	1.09 ± 0.33	10.00 ± 8.0[illegible]
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	7.	101259.		0.57 ± 0.87	1.12 ± 0.95	4.63 ± 4.84
	All Matrix	12.	173586.		0.39 ± 0.68	1.10 ± 0.73	6.87 ± 6.65

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/C-3
Individual Grid Openings = 0.000069 Sq Cm
Number of Grid Openings = 1
Film Magnification = 20000

(To provide the reader with the most complete data, the computer printouts are included. This is the best copy available; we regret the occasional undecipherable number.)

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-027A 159-B-187 (cont.)

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	2	C	0.062	0.625	1.25	2.0	0.127	.	.	.	.	
1	3	M	2.500	0.937	7.19	7.7	.	.	X	.	.	
1	4	C	0.062	0.187	1.25	6.7	0.038	.	.	.	.	
1	5	B	0.062	0.312	1.25	4.0	0.063	.	.	.	.	
1	6	M	1.875	0.375	1.56	4.2	.	.	X	.	.	
1	7	F	0.000	0.062	0.44	7.0	.	.	X	.	.	
1	8	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	9	B	0.062	0.125	1.56	12.5	.	.	X	.	.	
1	10	M	1.125	0.250	0.62	2.5	.	.	X	.	.	
1	11	M	1.875	1.250	1.87	1.5	.	.	X	.	.	
1	12	M	0.625	0.125	1.56	12.5	0.317	.	.	.	.	
1	13	B	0.062	0.937	2.50	2.7	0.381	.	.	.	.	
1	14	C	0.062	1.250	1.56	1.2	.	.	X	.	.	
1	15	C	0.062	3.750	10.00	2.7	6.094	.	.	.	.	
1	16	C	0.062	0.625	3.75	6.0	0.381	.	.	.	.	
1	17	M	1.562	0.375	1.25	3.3	1.904	.	.	.	.	
1	18	B	0.062	1.250	8.75	7.0	1.777	.	.	.	.	
1	19	F	0.000	0.062	1.94	31.0	0.015	.	.	.	.	
1	20	F	0.000	0.125	1.63	13.0	0.052	.	.	.	.	
1	21	M	1.875	0.750	1.56	2.1	.	.	X	.	.	
1	22	C	0.062	1.250	3.12	2.5	0.635	.	.	.	.	
1	23	M	2.500	0.062	1.87	30.0	0.762	.	.	.	.	
1	24	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	25	F	0.000	0.062	1.38	22.0	0.011	.	.	.	.	
1	26	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
1	27	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	28	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	29	C	0.062	1.250	1.25	1.0	0.254	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-027A

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	30	B	0.062	0.125	1.13	9.0	.	.	X	.	.	
1	31	B	0.062	0.312	1.56	5.0	.	.	X	.	.	
1	32	F	0.000	0.062	3.12	50.0	.	.	X	.	.	
1	33	B	0.062	0.125	0.62	5.0	.	.	X	.	.	
1	34	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	35	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	36	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
1	37	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	38	C	0.062	0.937	2.19	2.3	.	.	X	.	.	
1	39	B	0.062	0.437	2.00	4.6	.	.	X	.	.	
1	40	F	0.000	0.062	1.31	21.0	0.010	.	.	.	.	
1	41	C	0.062	0.125	3.12	25.0	0.063	.	.	.	.	
1	42	B	0.062	0.312	1.87	6.0	.	.	X	.	.	
1	43	F	0.000	0.062	1.75	28.0	0.014	.	.	.	.	
1	44	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	45	F	0.000	0.062	1.50	24.0	0.012	.	.	.	.	
			Total Mass (Picogram)=				12.978	0.000				
			Total Count			=	30.	0.	15.	0.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-027A
TABLE PREPARATION DATE: 31-AUG-82

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	17.	245914.	2617.8	0.07 ± 0.02	1.05 ± 0.49	16.00 ± 7.5
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.0
	Other	2.	28931.		0.06 ± 0.00	1.78 ± 1.90	28.50 ±30.4
	All Fiber	19.	274845.		0.07 ± 0.01	1.13 ± 0.69	17.32 ±10.85
Bundle	Chrysotile	3.	43397.	32137.7	0.83 ± 0.48	4.17 ± 4.02	4.56 ± 2.2
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	6.	86793.		0.24 ± 0.13	1.46 ± 0.51	7.01 ± 3.14
	All Bundle	9.	130190.		0.44 ± 0.40	2.36 ± 2.46	6.19 ± 2.98
Cluster	Chrysotile	7.	101259.	109819.1	1.12 ± 1.25	3.39 ± 3.10	6.55 ± 8.46
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	2.	28931.		1.09 ± 0.22	1.87 ± 0.44	1.79 ± 0.77
	All Cluster	9.	130190.		1.11 ± 1.08	3.06 ± 2.77	5.49 ± 7.58
Matrix	Chrysotile	3.	43397.	43156.4	0.19 ± 0.17	1.56 ± 0.31	15.28 ±13.55
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	5.	72328.		0.71 ± 0.41	2.56 ± 2.63	3.58 ± 2.49
	All Matrix	8.	115724.		0.52 ± 0.42	2.19 ± 2.06	7.97 ± 9.62

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/C-3
Individual Grid Opening = 0.000069 Sq Cm
Number of Grid Openings = 1
Film Magnification = 20000

(To provide the reader with the most complete data, the computer printouts are included. This is the best copy available; we regret the occasional undecipherable number.)

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-028 159-D-189

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	2	M	1.063	0.062	0.94	15.0	0.162	.	.	.	.	
1	3	M	0.937	0.062	0.69	11.0	0.105	.	.	.	.	
1	4	C	0.062	0.062	0.50	8.0	.	.	X	.	.	
1	5	B	0.062	0.125	1.56	12.5	0.032	.	.	.	.	
1	6	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
1	7	B	0.062	0.250	0.75	3.0	.	.	X	.	.	
1	8	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	9	B	0.062	0.125	0.50	4.0	.	.	X	.	.	
1	10	F	0.000	0.062	0.75	12.0	.	.	X	.	.	
1	11	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	12	M	0.500	0.062	1.56	25.0	0.127	.	.	.	.	
1	13	M	0.625	0.125	1.25	10.0	.	.	X	.	.	
1	14	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	15	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	16	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
1	17	C	0.062	0.125	1.25	10.0	0.025	.	.	.	.	
1	18	F	0.000	0.062	1.81	29.0	0.014	.	.	.	.	
1	19	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	20	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	21	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	22	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
2	23	M	1.250	0.312	0.94	3.0	.	.	X	.	.	
2	24	C	0.062	0.937	1.25	1.3	0.190	.	.	.	.	
2	25	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
2	26	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
2	27	F	0.000	0.125	0.62	5.0	.	0.023	.	.	.	NA(11) MG(6) SI(50) FE(32)
2	28	M	0.750	0.062	0.75	12.0	.	.	X	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-028

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbo	No Fstl	X-Ray
2	29	B	0.062	0.312	1.56	5.0	0.079	.	.	.	.	
2	30	B	0.062	0.187	1.31	7.0	0.040	.	.	.	.	
2	31	C	0.062	0.312	1.87	6.0	0.095	.	.	.	.	
2	32	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
2	33	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
2	34	B	0.062	0.437	6.56	15.0	0.467	.	.	.	.	
2	35	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
2	36	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
2	37	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
2	38	F	0.000	0.062	1.56	25.0	0.012	.	.	.	.	
2	39	C	0.062	0.375	0.62	1.7	.	.	X	.	.	
2	40	M	0.437	0.312	1.25	4.0	0.444	.	.	.	.	
2	41	F	0.000	0.062	0.44	7.0	.	.	.	.	X	
2	42	F	0.000	0.125	1.63	13.0	0.052	.	.	.	.	
2	43	F	0.000	0.187	1.25	6.7	0.090	.	.	.	.	
2	44	F	0.000	0.125	0.75	6.0	0.024	.	.	.	.	
2	45	F	0.000	0.125	0.75	6.0	0.024	.	.	.	.	
2	46	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
2	47	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	
3	48	C	0.062	0.125	0.94	7.5	.	.	X	.	.	
3	49	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
3	50	C	0.062	0.625	0.62	1.0	.	.	X	.	.	
3	51	C	0.062	0.125	0.75	6.0	0.015	.	.	.	.	
3	52	F	0.000	0.062	1.56	25.0	0.012	.	.	.	.	
3	53	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
3	54	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
3	55	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
3	56	F	0.000	0.125	0.62	5.0	0.020	.	.	.	.	
3	57	M	0.750	0.125	0.94	7.5	0.229	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-028

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
3	58	B	0.062	0.625	2.31	3.7	.	.	X	.	.	
3	59	B	0.062	0.625	2.63	4.2	.	.	X	.	.	
3	60	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
3	61	B	0.062	0.437	2.19	5.0	0.156	.	.	.	.	
3	62	B	0.062	0.250	0.75	3.0	.	.	X	.	.	
3	63	F	0.000	0.062	0.31	5.0	.	.	X	.	.	
3	64	F	0.000	0.062	2.63	42.0	0.021	.	.	.	.	
3	65	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
3	66	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
3	67	C	0.062	0.250	1.25	5.0	0.051	.	.	.	.	
3	68	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
3	69	C	0.062	0.312	0.62	2.0	0.032	.	.	.	.	
3	70	B	0.062	0.312	1.94	6.2	0.098	.	.	.	.	
3	71	B	0.062	0.187	1.13	6.0	.	.	X	.	.	
3	72	F	0.000	0.125	0.62	5.0	0.020	.	.	.	.	
3	73	B	0.062	0.125	1.25	10.0	0.025	.	.	.	.	
3	74	M	0.625	0.062	0.94	15.0	.	.	X	.	.	
4	75	F	0.000	0.062	0.31	5.0	.	0.003	.	.	.	
4	76	B	0.062	0.250	3.00	12.0	0.122	.	.	.	.	
4	77	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
4	78	F	0.000	0.062	1.63	26.0	0.013	.	.	.	.	
4	79	F	0.000	0.062	0.25	4.0	.	.	X	.	.	
4	80	F	0.000	0.062	0.75	12.0	.	.	X	.	.	
4	81	F	0.000	0.062	0.69	11.0	.	.	X	.	.	
4	82	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
4	83	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
4	84	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
4	85	M	0.625	0.062	0.50	8.0	.	.	X	.	.	
4	86	F	0.000	0.062	1.69	27.0	0.013	.	.	.	.	

TIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-02B

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Fatt	X-Ray
4	87	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
4	88	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
4	89	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
4	90	F	0.000	0.062	3.00	48.0	0.024	.	.	.	.	
4	91	C	0.062	0.437	1.25	2.9	0.089	.	.	.	.	
4	92	C	0.062	0.125	0.44	3.5	.	.	X	.	.	
5	93	M	0.625	0.062	0.94	15.0	0.095	.	.	.	.	
5	94	F	0.000	0.062	0.44	7.0	.	.	.	.	X	
5	95	F	0.000	0.062	1.81	29.0	0.014	.	.	.	.	
5	96	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
5	97	C	0.062	0.187	0.50	2.7	0.015	.	.	.	.	
5	98	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
5	99	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
5	100	B	0.062	0.187	3.63	19.3	0.110	.	.	.	.	
5	101	C	0.062	0.625	1.87	3.0	.	.	X	.	.	
5	102	C	0.062	0.750	1.25	1.7	.	.	X	.	.	
5	103	C	0.062	0.937	1.56	1.7	.	.	X	.	.	
5	104	C	0.062	0.312	0.62	2.0	.	.	X	.	.	
5	105	F	0.000	0.062	0.81	13.0	.	.	.	.	X	
5	106	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
5	107	F	0.000	0.062	1.31	21.0	0.010	.	.	.	.	
5	108	F	0.000	0.062	2.50	40.0	0.020	.	.	.	.	
5	109	B	0.062	0.250	2.31	9.3	0.094	.	.	.	.	
5	110	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
5	111	C	0.062	0.125	1.25	10.0	.	.	X	.	.	
5	112	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
5	113	F	0.000	0.062	2.88	46.0	0.023	.	.	.	.	
5	114	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
5	115	F	0.000	0.062	0.56	9.0	.	.	X	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-028

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
5	116	M	2.500	0.125	0.94	7.5	.	.	X	.	.	
5	117	C	0.062	0.250	1.25	5.0	0.051	.	.	.	.	
			Total Mass (Picogram)=				3.605	0.026				
			Total Count			=	84.	2.	28.	0.	3.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-028 TABLE PREPARATION DATE: 31-AUG-82

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	59.	178978.	1990.2	0.07 ± 0.02	1.00 ± 0.63	15.21 ±10.39
	Amphibole	2.	6067.	78.5	0.09 ± 0.04	0.47 ± 0.22	5.00 ± 0.00
	Other	9.	27302.		0.06 ± 0.00	0.56 ± 0.21	8.89 ± 3.3
	All Fiber	70.	212346.		0.07 ± 0.02	0.93 ± 0.61	14.11 ± 9.95
Bundle	Chrysotile	10.	30335.	3710.6	0.26 ± 0.11	2.53 ± 1.61	10.13 ± 4.6
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	6.	18201.		0.34 ± 0.22	1.34 ± 0.90	3.98 ± 1.11
	All Bundle	16.	48536.		0.29 ± 0.16	2.09 ± 1.47	7.82 ± 4.7
Cluster	Chrysotile	9.	27302.	1709.9	0.33 ± 0.25	1.11 ± 0.42	4.54 ± 2.88
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.0
	Other	10.	30335.		0.41 ± 0.31	0.97 ± 0.49	4.00 ± 3.3
	All Cluster	19.	57637.		0.37 ± 0.28	1.04 ± 0.45	4.26 ± 2.91
Matrix	Chrysotile	6.	18201.	3523.8	0.11 ± 0.10	1.05 ± 0.31	12.92 ± 7.31
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	6.	18201.		0.12 ± 0.10	0.89 ± 0.25	9.25 ± 4.12
	All Matrix	12.	36402.		0.12 ± 0.09	0.97 ± 0.28	11.08 ± 5.9

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/C-4
Individual Grid Opening = 0.000066 Sq Cm
Number of Grid Openings = 5
Film Magnification = 20000

(To provide the reader with the most complete data, the computer printouts are included. This is the best copy available; we regret the occasional undecipherable number.)

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 01-SEP-82

SAMPLE CODE: C06545-031 161-B-193

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	2	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
1	3	C	0.062	0.375	1.25	3.3	.	.	X	.	.	
1	4	F	0.000	0.062	1.06	17.0	0.008	.	.	.	.	
1	5	B	0.062	0.312	1.25	4.0	0.063	.	.	.	.	
1	6	B	0.062	0.312	0.94	3.0	.	.	X	.	.	
1	7	C	0.062	0.375	0.37	1.0	.	.	X	.	.	
1	8	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	9	C	0.062	0.250	0.87	3.5	.	.	X	.	.	
1	10	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	11	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	12	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
1	13	F	0.000	0.125	0.62	5.0	.	.	X	.	.	
1	14	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	15	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	16	C	0.062	0.500	0.75	1.5	.	.	X	.	.	
1	17	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	18	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
1	19	F	0.000	0.062	1.25	20.0	.	.	X	.	.	
1	20	C	0.062	0.312	11.25	36.0	0.571	.	.	.	.	
1	21	F	0.000	0.062	0.44	7.0	.	.	X	.	.	
1	22	M	0.187	0.062	0.75	12.0	0.023	.	.	.	.	
1	23	M	0.500	0.125	0.44	3.5	.	.	X	.	.	
1	24	B	0.062	0.125	1.13	9.0	0.023	.	.	.	.	
1	25	F	0.000	0.062	0.75	12.0	.	.	X	.	.	
1	26	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
1	27	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
1	28	F	0.000	0.125	1.31	10.5	0.042	.	.	.	.	
1	29	C	0.062	0.125	1.38	11.0	.	.	X	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 01-SEP-82

SAMPLE CODE: C06545-031

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	30	M	0.312	0.062	0.75	12.0	0.038	.	.	.	.	
1	31	M	5.625	0.125	1.25	10.0	.	.	X	.	.	
1	32	M	3.750	0.312	1.56	5.0	.	.	X	.	.	
1	33	C	0.062	4.375	8.75	2.0	6.221	.	.	.	.	
1	34	M	0.625	0.062	2.25	36.0	0.229	.	.	.	.	
1	35	M	6.188	0.625	1.87	3.0	18.853	.	.	.	.	
1	36	C	0.062	0.937	2.50	2.7	.	.	X	.	.	
1	37	F	0.000	0.062	1.31	21.0	0.010	.	.	.	.	
1	38	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	39	F	0.000	0.062	2.06	33.0	0.016	.	.	.	.	
1	40	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	41	C	0.062	0.625	6.87	11.0	0.698	.	.	.	.	
1	42	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	43	M	1.875	0.062	0.75	12.0	0.229	.	.	.	.	
1	44	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
1	45	B	0.062	0.125	0.62	5.0	.	.	X	.	.	
1	46	F	0.000	0.062	0.50	8.0	.	.	X	.	.	
1	47	B	0.062	0.125	0.81	6.5	0.017	.	.	.	.	
1	48	C	0.062	0.500	0.75	1.5	.	.	X	.	.	
1	49	C	0.062	0.625	4.69	7.5	.	.	X	.	.	
1	50	B	0.062	0.187	0.75	4.0	.	.	X	.	.	
1	51	F	0.000	0.062	0.37	6.0	.	.	.	.	X	
1	52	F	0.000	0.125	2.38	19.0	0.076	.	.	.	.	
1	53	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	54	F	0.000	0.062	1.25	20.0	.	.	.	.	X	
1	55	C	0.062	0.750	1.56	2.1	.	.	X	.	.	
1	56	C	0.062	0.625	1.56	2.5	.	.	X	.	.	
1	57	C	0.062	0.625	1.87	3.0	0.190	.	.	.	.	
1	58	C	0.062	0.312	0.94	3.0	0.048	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 01-SEP-82

SAMPLE CODE: C06545-031

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambis	Not Asbe	No Fatt	X-Ray
1	59	M	0.375	0.062	0.75	12.0	.	.	.	.	X	
1	60	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	61	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
1	62	B	0.062	0.187	1.63	8.7	.	.	X	.	.	
1	63	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
1	64	F	0.000	0.062	0.75	12.0	.	.	X	.	.	
1	65	F	0.000	0.062	1.06	17.0	0.008	.	.	.	.	
1	66	F	0.000	0.062	1.69	27.0	0.013	.	.	.	.	
1	67	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	68	F	0.000	0.062	1.31	21.0	0.010	.	.	.	.	
1	69	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	70	F	0.000	0.125	0.44	3.5	0.014	.	.	.	.	
1	71	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	72	F	0.000	0.062	1.63	26.0	0.013	.	.	.	.	
1	73	C	0.062	0.625	2.19	3.5	.	.	X	.	.	
1	74	F	0.000	0.062	2.50	40.0	0.020	.	.	.	.	
1	75	F	0.000	0.062	0.94	15.0	.	.	.	.	X	
1	76	F	0.000	0.062	0.37	6.0	.	.	.	.	X	
1	77	M	0.625	0.062	1.56	25.0	.	.	X	.	.	
1	78	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	79	C	0.062	0.625	1.13	1.8	0.114	.	.	.	.	
1	80	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
1	81	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	82	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	83	C	0.062	0.125	0.62	5.0	.	.	X	.	.	
1	84	B	0.062	0.625	10.00	16.0	1.016	.	.	.	.	
1	85	M	1.875	0.312	1.25	4.0	1.904	.	.	.	.	
1	86	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
1	87	F	0.000	0.062	1.94	31.0	0.015	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 01-SEP-82

SAMPLE CODE: C06545-031

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	88	F	0.000	0.062	1.63	26.0	0.013	.	.	.	.	
1	89	C	0.062	0.625	1.87	3.0	.	.	X	.	.	
1	90	C	0.062	0.625	1.25	2.0	.	.	X	.	.	
1	91	B	0.062	1.875	4.06	2.2	.	.	.	.	.	
1	92	B	0.062	0.125	1.87	15.0	0.038	.	.	.	.	
1	93	B	0.062	0.625	1.87	3.0	0.190	.	.	.	.	
1	94	M	0.750	0.125	1.13	9.0	0.274	.	.	.	.	
1	95	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	96	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	97	C	0.062	0.312	0.62	2.0	0.032	.	.	.	.	
1	98	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	99	F	0.000	0.062	1.56	25.0	0.012	.	.	.	.	
1	100	F	0.000	0.062	1.75	28.0	.	.	X	.	.	
1	101	F	0.000	0.062	3.44	55.0	.	.	.	.	X	
1	102	M	0.500	0.062	0.62	10.0	0.051	.	.	.	.	
1	103	M	0.625	0.062	3.88	62.0	0.394	.	.	.	.	
1	104	B	0.062	0.125	1.13	9.0	.	.	X	.	.	
1	105	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	106	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	107	F	0.000	0.062	0.75	12.0	.	.	.	.	X	
1	108	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
1	109	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	110	M	0.312	0.062	0.50	8.0	.	.	X	.	.	
1	111	F	0.000	0.062	2.56	41.0	0.020	.	.	.	.	
1	112	B	0.062	1.250	10.00	8.0	2.031	.	.	.	.	
1	113	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
			Total Mass (Picogram)=				33.752	0.000				
			Total Count =				74.	0.	32.	0.	7.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-031 TABLE PREPARATION DATE: 01-SEP-82

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	51.	749339.	7434.8	0.07 ± 0.01	1.00 ± 0.57	15.37 ± 8.70
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	13.	191008.		0.07 ± 0.02	1.01 ± 0.83	15.85 ±13.58
	All Fiber	64.	940347.		0.07 ± 0.02	1.00 ± 0.63	15.47 ± 9.73
Bundle	Chrysotile	7.	102850.	49635.9	0.46 ± 0.42	3.85 ± 4.22	8.79 ± 5.05
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	6.	88158.		0.47 ± 0.69	1.52 ± 1.29	3.31 ± 2.9
	All Bundle	13.	191008.		0.46 ± 0.53	2.77 ± 3.33	7.18 ± 4.45
Cluster	Chrysotile	7.	102850.	115696.0	1.03 ± 1.48	4.49 ± 4.38	8.40 ±12.60
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	14.	205701.		0.50 ± 0.23	1.54 ± 1.09	3.58 ± 2.70
	All Cluster	21.	308551.		0.68 ± 0.87	2.53 ± 2.93	5.18 ± 7.60
Matrix	Chrysotile	9.	132236.	323146.7	0.16 ± 0.19	1.47 ± 1.06	17.78 ±19.15
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	6.	88158.		0.12 ± 0.10	1.01 ± 0.51	10.58 ± 7.72
	All Matrix	15.	220394.		0.15 ± 0.16	1.29 ± 0.89	14.90 ±15.63

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/D-2
Individual Grid Opening = 0.000068 Sq Cm
Number of Grid Openings = 1
Film Magnification = 20000

(To provide the reader with the most complete data, the computer printouts are included. This is the best copy available; we regret the occasional undecipherable number.)

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-MAY-83

SAMPLE CODE: C06545-33 (Pre)

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	
2	2	M	0.062	0.125	0.50	4.0	0.010	.	.	.	.	
2	3	F	0.000	0.125	0.62	5.0	.	0.023	.	.	.	
2	4	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
2	5	F	0.000	0.062	0.62	10.0	.	.	X	.	.	
2	6	C	0.062	0.312	0.94	3.0	0.048	.	.	.	.	
2	7	C	0.062	0.625	0.94	1.5	0.095	.	.	.	.	
2	8	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
2	9	C	0.062	1.250	1.25	1.0	.	.	X	.	.	
2	10	B	0.062	0.187	0.69	3.7	0.021	.	.	.	.	
2	11	C	0.062	0.937	1.56	1.7	0.238	.	.	.	.	
2	12	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	13	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
2	14	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
2	15	F	0.000	0.062	1.56	25.0	0.012	.	.	.	.	
2	16	F	0.000	0.062	2.25	36.0	0.018	.	.	.	.	
3	17	F	0.000	0.062	1.13	18.0	.	.	X	.	.	
3	18	F	0.000	0.062	1.38	22.0	0.011	.	.	.	.	
3	19	M	0.125	1.250	2.50	2.0	.	.	X	.	.	
3	20	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
3	21	M	0.062	0.062	1.69	27.0	0.017	.	.	.	.	
3	22	M	0.062	0.062	1.19	19.0	0.012	.	.	.	.	
3	23	B	0.062	0.312	2.50	8.0	0.127	.	.	.	.	
4	24	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
4	25	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
4	26	M	0.062	0.125	0.94	7.5	.	.	X	.	.	
4	27	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
4	28	F	0.000	0.125	0.44	3.5	.	0.016	.	.	.	
4	29	B	0.062	0.187	5.75	30.7	0.175	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-MAY-83

SAMPLE CODE: C06545-33

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
4	30	F	0.000	0.062	2.31	37.0	0.018	.	.	.	.	
4	31	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
4	32	F	0.000	0.062	1.75	28.0	0.014	.	.	.	.	
4	33	F	0.000	0.062	1.13	18.0	.	0.010	.	.	.	
4	34	C	0.062	0.187	0.75	4.0	0.023	.	.	.	.	
4	35	B	0.062	0.187	1.87	10.0	.	.	X	.	.	
4	36	F	0.000	0.125	1.13	9.0	0.036	.	.	.	.	
5	37	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
5	38	B	0.062	0.250	3.81	15.3	0.155	.	.	.	.	
5	39	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
5	40	B	0.062	0.625	1.56	2.5	.	.	X	.	.	
5	41	C	0.062	1.875	3.75	2.0	1.143	.	.	.	.	
5	42	M	0.125	1.250	1.87	1.5	0.762	.	.	.	.	
6	43	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
6	44	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
6	45	C	0.062	0.250	0.75	3.0	.	.	X	.	.	
6	46	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
6	47	C	0.062	1.250	5.00	4.0	1.016	.	.	.	.	
6	48	M	0.062	0.062	1.25	20.0	0.013	.	.	.	.	
6	49	C	0.062	0.500	2.50	5.0	0.203	.	.	.	.	
6	50	M	0.062	0.125	1.25	10.0	0.025	.	.	.	.	
6	51	B	0.062	0.250	1.00	4.0	.	.	X	.	.	
6	52	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
6	53	M	0.062	0.062	1.25	20.0	0.013	.	.	.	.	
6	54	M	0.062	0.062	0.56	9.0	0.006	.	.	.	.	
6	55	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
6	56	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	
7	57	M	0.062	0.062	1.13	18.0	0.011	.	.	.	.	
7	58	M	0.062	0.062	0.31	5.0	.	.	X	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-MAY-83

SAMPLE CODE: C06545-33

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
7	59	M	0.062	0.062	0.31	5.0	.	.	X	.	.	
7	60	M	0.062	0.062	0.75	12.0	.	.	X	.	.	
7	61	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
7	62	C	0.062	1.250	1.87	1.5	.	.	X	.	.	
8	63	C	0.062	0.187	3.44	18.3	0.105	.	.	.	.	
8	64	F	0.000	0.062	1.69	27.0	0.013	.	.	.	.	
8	65	C	0.062	5.000	5.00	1.0	4.062	.	.	.	.	
8	66	B	0.062	0.187	0.94	5.0	0.029	.	.	.	.	
8	67	C	0.062	1.562	1.87	1.2	0.476	.	.	.	.	
8	68	M	0.062	0.062	0.50	8.0	.	.	X	.	.	
8	69	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
8	70	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
8	71	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
8	72	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
8	73	F	0.000	0.062	0.69	11.0	.	.	X	.	.	
8	74	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
8	75	F	0.000	0.062	0.75	12.0	.	0.007	.	.	.	
8	76	F	0.000	0.125	0.50	4.0	.	0.018	.	.	.	
8	77	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
8	78	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
8	79	M	0.062	0.062	0.81	13.0	0.008	.	.	.	.	
8	80	F	0.000	0.062	0.31	5.0	.	0.003	.	.	.	
9	81	B	0.062	0.250	0.94	3.7	0.038	.	.	.	.	
9	82	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
9	83	F	0.000	0.125	0.69	5.5	0.022	.	.	.	.	
9	84	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
9	85	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
9	86	C	0.062	1.125	1.25	1.1	.	.	X	.	.	
10	87	M	0.062	0.125	1.25	10.0	0.025	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-MAY-83

SAMPLE CODE: C06545-33

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
10	88	C	0.062	0.187	0.62	3.3	0.019	.	.	.	.	
10	89	C	0.062	0.125	0.50	4.0	.	.	X	.	.	
10	90	C	0.062	1.250	1.56	1.2	0.317	.	.	.	.	
10	91	M	0.062	0.062	1.25	20.0	0.013	.	.	.	.	
10	92	F	0.000	0.062	0.94	15.0	.	.	.	X	.	
			Total Mass (Picogram)=				9.524	0.078				
			Total Count =				68.	6.	17.	1.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-33 TABLE PREPARATION DATE: 25-MAY-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	37.	56035.	474.1	0.07 ± 0.01	0.91 ± 0.51	14.23 ± 8.26
	Amphibole	6.	9087.	117.6	0.09 ± 0.03	0.62 ± 0.29	7.92 ± 5.83
	Other	4.	6058.		0.06 ± 0.00	0.84 ± 0.23	13.50 ± 3.70
	All Fiber	47.	71180.		0.07 ± 0.02	0.87 ± 0.47	13.36 ± 7.80
Bundle	Chrysotile	6.	9087.	824.8	0.23 ± 0.05	2.44 ± 2.02	11.06 ±10.55
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	3.	4543.		0.35 ± 0.24	1.48 ± 0.44	5.50 ± 3.97
	All Bundle	9.	13630.		0.27 ± 0.14	2.12 ± 1.68	9.20 ± 9.01
Cluster	Chrysotile	12.	18174.	11729.2	1.16 ± 1.34	2.33 ± 1.60	3.86 ± 4.75
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	5.	7572.		0.80 ± 0.56	1.13 ± 0.53	2.12 ± 1.32
	All Cluster	17.	25746.		1.05 ± 1.16	1.97 ± 1.47	3.35 ± 4.07
Matrix	Chrysotile	13.	19688.	1395.8	0.17 ± 0.33	1.13 ± 0.41	13.96 ± 7.35
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	6.	9087.		0.27 ± 0.48	0.89 ± 0.83	3.58 ± 3.41
	All Matrix	19.	28775.		0.20 ± 0.37	1.05 ± 0.56	11.63 ± 7.19

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/D-4
Individual Grid Opening = 0.000066 Sq Cm
Number of Grid Openings = 10
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-35 (J 15)

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
2	2	F	0.000	0.125	0.62	5.0	0.020	.	.	.	.	
2	3	M	0.062	0.125	1.25	10.0	.	.	X	.	.	
2	4	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
2	5	F	0.000	0.062	0.62	10.0	.	.	.	X	.	
2	6	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	7	F	0.000	0.062	3.19	51.0	0.025	.	.	.	.	
2	8	M	0.062	0.062	0.94	15.0	0.010	.	.	.	.	
2	9	M	0.062	0.062	1.13	18.0	0.011	.	.	.	.	
2	10	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
3	11	M	0.062	0.062	0.50	8.0	.	.	X	.	.	
3	12	B	0.125	0.250	0.81	3.3	.	.	X	.	.	
3	13	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
3	14	M	0.062	0.125	1.25	10.0	.	.	X	.	.	
3	15	C	0.062	0.125	0.75	6.0	0.015	.	.	.	.	
3	16	M	0.062	0.125	0.75	6.0	0.015	.	.	.	.	
4	17	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
5	18	M	0.062	0.250	0.62	2.5	0.025	.	.	.	.	
5	19	M	0.062	0.250	0.87	3.5	0.036	.	.	.	.	
5	20	F	0.000	0.062	1.38	22.0	0.011	.	.	.	.	
5	21	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
5	22	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
5	23	B	0.062	0.125	0.81	6.5	0.017	.	.	.	.	
5	24	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
5	25	F	0.000	0.062	0.25	4.0	.	0.002	.	.	.	
6	26	F	0.000	0.062	2.44	39.0	0.019	.	.	.	.	
6	27	M	0.062	0.062	0.62	10.0	.	.	X	.	.	
6	28	F	0.000	0.062	0.69	11.0	0.005	.	.	..	.	
6	29	C	0.062	0.125	0.37	3.0	0.008	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-35

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
6	30	F	0.000	0.125	2.63	21.0	0.084	.	.	.	.	
6	31	C	0.062	0.937	1.87	2.0	0.286	.	.	.	.	
7	32	F	0.000	0.187	1.00	5.3	0.072	.	.	.	.	
7	33	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
7	34	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
7	35	F	0.000	0.125	1.75	14.0	0.056	.	.	.	.	
7	36	B	0.062	0.125	0.69	5.5	0.014	.	.	.	.	
7	37	M	0.062	0.125	0.94	7.5	0.019	.	.	.	.	
7	38	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
7	39	M	0.125	0.500	1.25	2.5	.	.	X	.	.	
8	40	C	0.062	0.125	0.87	7.0	0.018	.	.	.	.	
8	41	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
8	42	C	0.062	0.125	1.13	9.0	0.023	.	.	.	.	
8	43	M	0.062	0.062	1.25	20.0	0.013	.	.	.	.	
8	44	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
8	45	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
8	46	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
9	47	C	0.062	0.312	2.50	8.0	0.127	.	.	.	.	
9	48	F	0.000	0.062	1.38	22.0	0.011	.	.	.	.	
9	49	F	0.000	0.125	0.56	4.5	.	0.021	.	.	.	
10	50	F	0.000	0.125	2.50	20.0	0.080	.	.	.	.	
10	51	F	0.000	0.125	0.87	7.0	.	0.032	.	.	.	
10	52	C	0.062	0.250	0.62	2.5	0.025	.	.	.	.	
10	53	M	0.062	0.062	0.50	8.0	0.005	.	.	.	.	
10	54	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
10	55	C	0.062	0.125	0.62	5.0	0.013	.	.	.	.	
10	56	C	0.062	1.250	1.87	1.5	0.381	.	.	.	.	
10	57	B	0.062	0.125	1.25	10.0	0.025	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-35

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
Total Mass (Picogram)=							1.556	0.055				
Total Count =							47.	3.	6.	1.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-35 TABLE PREPARATION DATE: 26-MAY-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	25.	40284.	730.2	0.08 ± 0.03	1.08 ± 0.80	14.41 ±10.73
	Amphibole	3.	4834.	89.0	0.10 ± 0.04	0.56 ± 0.31	5.17 ± 1.61
	Other	1.	1611.		0.06 ± 0.00	0.62 ± 0.00	10.00 ± 0.00
	All Fiber	29.	46729.		0.08 ± 0.03	1.01 ± 0.77	13.30 ±10.36
Bundle	Chrysotile	3.	4834.	90.0	0.12 ± 0.00	0.92 ± 0.30	7.33 ± 2.36
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	1.	1611.		0.25 ± 0.00	0.81 ± 0.00	3.25 ± 0.00
	All Bundle	4.	6445.		0.16 ± 0.06	0.89 ± 0.25	6.31 ± 2.81
Cluster	Chrysotile	9.	14502.	1442.2	0.37 ± 0.42	1.18 ± 0.73	4.89 ± 2.77
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	0.	0.		0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	All Cluster	9.	14502.		0.37 ± 0.42	1.18 ± 0.73	4.89 ± 2.77
Matrix	Chrysotile	10.	16113.	236.3	0.11 ± 0.08	0.82 ± 0.24	10.05 ± 5.90
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	5.	8057.		0.17 ± 0.18	0.98 ± 0.38	8.10 ± 3.25
	All Matrix	15.	24170.		0.13 ± 0.12	0.87 ± 0.29	9.40 ± 5.13

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/E-1
Individual Grid Opening = 0.000062 Sq Cm
Number of Grid Openings = 10
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-37

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	2	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	3	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	4	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
1	5	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	6	M	0.062	0.250	0.50	2.0	0.020	.	.	.	.	
1	7	C	0.062	0.125	1.25	10.0	0.025	.	.	.	.	
1	8	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	9	M	0.062	0.125	1.56	12.5	.	.	X	.	.	
1	10	C	0.062	0.187	1.13	6.0	.	.	X	.	.	
2	11	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
2	12	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
2	13	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
2	14	B	0.062	0.187	1.44	7.7	.	.	X	.	.	
2	15	C	0.062	0.625	0.94	1.5	0.095	.	.	.	.	
2	16	F	0.000	0.125	3.69	29.5	0.118	.	.	.	.	
2	17	B	0.062	0.375	1.50	4.0	.	.	X	.	.	
2	18	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	19	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
2	20	M	0.062	0.125	1.38	11.0	0.028	.	.	.	.	
2	21	F	0.000	0.062	0.25	4.0	.	.	X	.	.	
2	22	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
2	23	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
3	24	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
3	25	C	0.062	2.500	3.75	1.5	1.523	.	.	.	.	
3	26	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
4	27	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
4	28	B	0.062	0.187	2.75	14.7	0.084	.	.	.	.	
4	29	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-37

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
4	30	C	0.062	0.250	0.62	2.5	0.025	.	.	.	.	
4	31	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
4	32	F	0.000	0.062	0.56	9.0	.	.	X	.	.	
4	33	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
4	34	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
4	35	F	0.000	0.062	0.56	9.0	.	0.005	.	.	.	
4	36	M	0.062	0.125	2.25	18.0	0.046	.	.	.	.	
4	37	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
5	38	M	0.062	0.062	0.69	11.0	.	.	X	.	.	
5	39	M	0.062	0.062	0.75	12.0	0.008	.	.	.	.	
5	40	F	0.000	0.062	6.75	108.0	0.054	.	.	.	.	
5	41	F	0.000	0.062	2.00	32.0	0.016	.	.	.	.	
5	42	C	0.062	0.250	1.25	5.0	.	.	X	.	.	
5	43	C	0.125	1.875	2.50	1.3	1.523	.	.	.	.	
5	44	M	0.062	0.125	1.13	9.0	.	.	X	.	.	
5	45	C	0.062	0.312	1.87	6.0	0.095	.	.	.	.	
5	46	M	0.062	0.312	0.94	3.0	0.048	.	.	.	.	
5	47	M	0.062	0.250	0.94	3.7	0.038	.	.	.	.	
5	48	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
5	49	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
5	50	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
5	51	C	0.062	5.000	10.00	2.0	8.125	.	.	.	.	
5	52	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
5	53	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
5	54	M	0.062	1.250	1.87	1.5	0.381	.	.	.	.	
5	55	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
5	56	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
5	57	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
5	58	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-37

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
5	59	F	0.000	0.125	0.94	7.5	0.030	.	.	.	.	
5	60	C	0.125	3.750	4.37	1.2	5.332	.	.	.	.	
6	61	C	0.062	0.375	0.94	2.5	.	.	X	.	.	
6	62	M	0.062	0.125	0.62	5.0	.	.	X	.	.	
6	63	B	0.062	0.250	1.25	5.0	.	.	X	.	.	
6	64	F	0.000	0.125	1.00	8.0	.	.	.	.	.	
6	65	M	0.062	0.062	0.50	8.0	0.005	.	.	.	.	
6	66	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
6	67	B	0.062	0.125	0.62	5.0	0.013	.	.	.	.	
6	68	C	0.062	0.312	1.25	4.0	0.063	.	.	.	.	
6	69	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
6	70	C	0.062	0.250	0.62	2.5	0.025	.	.	.	.	
7	71	F	0.000	0.062	0.31	5.0	.	0.003	.	.	.	
7	72	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
7	73	F	0.000	0.125	1.31	10.5	0.042	.	.	.	.	
7	74	M	0.125	0.625	1.87	3.0	0.381	.	.	.	.	
7	75	B	0.062	0.125	2.38	19.0	0.048	.	.	.	.	
7	76	C	0.062	1.562	3.75	2.4	.	.	X	.	.	
7	77	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
7	78	M	0.062	0.062	0.87	14.0	0.009	.	.	.	.	
7	79	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
8	80	C	0.062	1.875	5.94	3.2	.	.	X	.	.	
8	81	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
8	82	F	0.000	0.062	3.75	60.0	0.030	.	.	.	.	
8	83	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
8	84	M	0.062	0.187	0.37	2.0	0.011	.	.	.	.	
9	85	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
9	86	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
9	87	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-37

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
9	88	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
9	89	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
9	90	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
9	91	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
9	92	C	0.062	2.500	3.44	1.4	1.396	.	.	.	.	
9	93	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
9	94	B	0.062	0.375	3.75	10.0	0.229	.	.	.	.	
9	95	M	0.062	1.250	1.25	1.0	.	.	X	.	.	
9	96	C	0.062	0.312	3.12	10.0	0.159	.	.	.	.	
9	97	C	0.062	0.750	2.50	3.3	.	.	X	.	.	
9	98	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
9	99	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
9	100	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
9	101	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
9	102	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
9	103	M	0.062	0.125	0.62	5.0	0.013	.	.	.	.	
9	104	B	0.062	0.250	1.25	5.0	0.051	.	.	.	.	
9	105	F	0.000	0.062	1.44	23.0	0.011	.	.	.	.	
			Total Mass (Picogram)=				20.335	0.008				
			Total Count			=	86.	2.	17.	0.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-37 TABLE PREPARATION DATE: 26-MAY-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	55.	94775.	900.3	0.07 ± 0.01	0.87 ± 1.06	13.01 ±16.00
	Amphibole	2.	3446.	13.9	0.06 ± 0.00	0.44 ± 0.18	7.00 ± 2.83
	Other	3.	5170.		0.08 ± 0.04	0.60 ± 0.38	7.00 ± 2.65
	All Fiber	60.	103391.		0.07 ± 0.02	0.84 ± 1.03	12.51 ±15.41
Bundle	Chrysotile	5.	8616.	730.7	0.21 ± 0.10	2.15 ± 1.24	10.73 ± 6.13
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	3.	5170.		0.27 ± 0.10	1.40 ± 0.13	5.56 ± 1.90
	All Bundle	8.	13785.		0.23 ± 0.10	1.87 ± 1.01	8.79 ± 5.45
Cluster	Chrysotile	12.	20678.	31688.0	1.48 ± 1.64	2.81 ± 2.60	3.66 ± 3.27
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	6.	10339.		0.83 ± 0.72	2.58 ± 1.96	3.73 ± 1.45
	All Cluster	18.	31017.		1.27 ± 1.41	2.74 ± 2.35	3.68 ± 2.75
Matrix	Chrysotile	14.	24125.	1722.8	0.25 ± 0.32	1.01 ± 0.60	7.38 ± 5.22
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	5.	8616.		0.34 ± 0.51	1.05 ± 0.39	7.70 ± 4.69
	All Matrix	19.	32741.		0.28 ± 0.37	1.02 ± 0.54	7.46 ± 4.96

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/E-3
Individual Grid Opening = 0.000064 Sq Cm
Number of Grid Openings = 9
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-34

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambis	Not Asbe	No Patt	X-Ray
1	1	M	0.062	0.062	0.37	6.0	0.004	.	.	.	.	
1	2	C	0.062	1.562	2.19	1.4	0.555	.	.	.	.	
1	3	M	0.062	0.125	0.62	5.0	.	.	X	.	.	
1	4	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	5	F	0.000	0.062	1.06	17.0	0.008	.	.	.	.	
1	6	F	0.000	0.062	0.62	10.0	.	.	X	.	.	
1	7	B	0.062	0.125	2.69	21.5	0.055	.	.	.	.	
1	8	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	9	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
1	10	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	11	C	0.062	0.187	0.31	1.7	0.010	.	.	.	.	
1	12	B	0.062	0.125	0.62	5.0	0.013	.	.	.	.	
1	13	C	0.062	0.187	7.38	39.3	0.225	.	.	.	.	
1	14	C	0.125	5.000	5.00	1.0	8.125	.	.	.	.	
1	15	M	0.062	0.125	2.50	20.0	0.051	.	.	.	.	
1	16	F	0.000	0.062	0.31	5.0	.	0.003	.	.	.	
1	17	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
1	18	F	0.000	0.062	1.06	17.0	0.008	.	.	.	.	
1	19	B	0.062	0.125	0.75	6.0	0.015	.	.	.	.	
1	20	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
1	21	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
2	22	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
2	23	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
2	24	F	0.000	0.062	3.12	50.0	0.025	.	.	.	.	
2	25	F	0.000	0.062	2.00	32.0	0.016	.	.	.	.	
2	26	M	0.062	0.062	0.62	10.0	0.005	.	.	.	.	
2	27	C	0.062	0.125	2.00	16.0	0.031	.	.	.	.	
2	28	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
2	29	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-34

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
2	30	C	0.062	0.187	0.62	3.3	0.019	.	.	.	.	
2	31	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	32	C	0.062	0.125	0.62	5.0	0.013	.	.	.	.	
2	33	F	0.000	0.062	2.31	37.0	0.018	.	.	.	.	
2	34	C	0.062	0.625	1.25	2.0	.	.	X	.	.	
2	35	M	0.062	0.062	0.94	15.0	0.010	.	.	.	.	
2	36	F	0.000	0.062	0.75	12.0	.	.	X	.	.	
2	37	F	0.000	0.062	0.75	12.0	.	.	X	.	.	
3	38	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
3	39	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
3	40	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
3	41	F	0.000	0.125	1.19	9.5	0.038	.	.	.	.	
3	42	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
3	43	C	0.062	1.250	2.19	1.8	0.444	.	.	.	.	
3	44	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
3	45	B	0.062	0.625	6.87	11.0	0.698	.	.	.	.	
3	46	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
3	47	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	
3	48	B	0.062	0.250	5.00	20.0	0.203	.	.	.	.	
3	49	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
4	50	F	0.000	0.125	1.00	8.0	0.032	.	.	.	.	
4	51	B	0.062	0.250	1.56	6.2	.	.	X	.	.	
4	52	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
4	53	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
4	54	F	0.000	0.062	0.87	14.0	.	0.008	.	.	.	
4	55	M	0.062	0.062	0.56	9.0	0.006	.	.	.	.	
4	56	C	0.062	0.125	0.62	5.0	.	.	X	.	.	
4	57	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
4	58	F	0.000	0.125	0.69	5.5	0.022	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-34

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambis	Not Asbe	No Patt	X-Ray
4	59	B	0.125	0.750	7.50	10.0	1.828	.	.	.	.	
4	60	C	0.125	1.875	2.50	1.3	1.523	.	.	.	.	
4	61	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
4	62	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
4	63	B	0.187	1.250	3.12	2.5	.	.	X	.	.	
4	64	M	0.062	0.187	1.25	6.7	0.038	.	.	.	.	
4	65	F	0.000	0.062	2.50	40.0	0.020	.	.	.	.	
4	66	C	0.062	0.500	0.75	1.5	.	.	X	.	.	
4	67	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
4	68	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
4	69	C	0.062	1.125	1.13	1.0	.	.	X	.	.	
5	70	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
5	71	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
5	72	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
5	73	F	0.000	0.062	1.69	27.0	0.013	.	.	.	.	
5	74	F	0.000	0.062	1.06	17.0	0.008	.	.	.	.	
5	75	F	0.000	0.062	0.31	5.0	.	.	X	.	.	
5	76	F	0.000	0.125	1.56	12.5	0.050	.	.	.	.	
5	77	F	0.000	0.125	0.81	6.5	0.026	.	.	.	.	
5	78	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
5	79	M	0.062	0.062	0.31	5.0	0.003	.	.	.	.	
5	80	C	0.062	0.437	0.87	2.0	.	.	X	.	.	
5	81	C	0.062	0.625	0.75	1.2	.	.	X	.	.	
5	82	F	0.000	0.125	0.62	5.0	0.020	.	.	.	.	
5	83	F	0.000	0.125	0.62	5.0	0.020	.	.	.	.	
6	84	F	0.000	0.125	0.94	7.5	.	.	.	X	.	
6	85	F	0.000	0.125	1.13	9.0	0.036	.	.	.	.	
6	86	F	0.000	0.125	8.63	69.0	0.275	.	.	.	.	
6	87	M	0.062	0.062	0.50	8.0	0.005	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-34

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
6	88	M	0.062	0.125	0.69	5.5	0.014	.	.	.	.	
6	89	C	0.187	1.250	2.38	1.9	1.447	.	.	.	.	
6	90	C	0.187	0.937	1.13	1.2	0.514	.	.	.	.	
6	91	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
6	92	F	0.000	0.062	0.69	11.0	.	.	X	.	.	
6	93	M	0.062	0.125	1.25	10.0	0.025	.	.	.	.	
6	94	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
6	95	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
6	96	F	0.000	0.125	2.13	17.0	0.068	.	.	.	.	
6	97	C	0.125	2.187	2.81	1.3	2.000	.	.	.	.	
6	98	C	0.125	1.125	1.25	1.1	0.457	.	.	.	.	
6	99	C	0.125	1.562	2.50	1.6	1.270	.	.	.	.	
6	100	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
6	101	B	0.062	0.187	0.75	4.0	.	.	X	.	.	
6	102	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
6	103	F	0.000	0.062	0.56	9.0	.	.	X	.	.	
6	104	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
6	105	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
			Total Mass (Picogram)=				20.547	0.011				
			Total Count			=	86.	2.	16.	1.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-34 TABLE PREPARATION DATE: 26-MAY-03

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	56.	140056.	2329.1	0.07 ± 0.02	1.10 ± 1.18	14.98 ±11.86
	Amphibole	2.	5002.	27.3	0.06 ± 0.00	0.59 ± 0.40	9.50 ± 6.36
	Other	7.	17507.		0.07 ± 0.02	0.66 ± 0.19	9.50 ± 2.57
	All Fiber	65.	162565.		0.07 ± 0.02	1.04 ± 1.11	14.22 ±11.21
Bundle	Chrysotile	6.	15006.	7032.8	0.33 ± 0.28	3.91 ± 3.00	12.25 ± 6.98
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	3.	7503.		0.56 ± 0.60	1.81 ± 1.21	4.25 ± 1.89
	All Bundle	9.	22509.		0.41 ± 0.39	3.21 ± 2.67	9.58 ± 6.88
Cluster	Chrysotile	14.	35014.	41622.4	1.25 ± 1.29	2.35 ± 1.87	5.57 ±10.48
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	6.	15006.		0.57 ± 0.33	0.90 ± 0.24	2.12 ± 1.47
	All Cluster	20.	50020.		1.05 ± 1.12	1.91 ± 1.70	4.53 ± 8.85
Matrix	Chrysotile	10.	25010.	404.8	0.09 ± 0.04	0.90 ± 0.65	9.52 ± 4.71
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	1.	2501.		0.12 ± 0.00	0.62 ± 0.00	5.00 ± 0.00
	All Matrix	11.	27511.		0.10 ± 0.04	0.87 ± 0.62	9.11 ± 4.68

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052102/D-5
Individual Grid Opening = 0.000067 Sq Cm
Number of Grid Openings = 6
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-36

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambis	Not Asbe	No Patt	X-Ray
1	1	M	0.062	0.125	1.31	10.5	.	.	X	.	.	
1	2	B	0.062	0.625	1.87	3.0	.	.	X	.	.	
1	3	M	0.062	0.125	0.62	5.0	.	.	X	.	.	
1	4	F	0.000	0.062	1.31	21.0	0.010	.	.	.	.	
1	5	F	0.000	0.062	1.25	20.0	.	0.012	.	.	.	
1	6	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	7	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	8	M	0.125	1.875	2.19	1.2	1.333	.	.	.	.	
1	9	M	0.062	0.187	1.25	6.7	.	.	X	.	.	
1	10	C	0.062	0.187	2.50	13.3	0.076	.	.	.	.	
1	11	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	12	F	0.000	0.125	0.75	6.0	0.024	.	.	.	.	
1	13	M	0.062	0.187	0.62	3.3	0.019	.	.	.	.	
1	14	F	0.000	0.062	0.62	10.0	.	0.006	.	.	.	
1	15	M	0.062	0.062	0.69	11.0	0.007	.	.	.	.	
1	16	M	0.062	0.250	0.94	3.7	0.038	.	.	.	.	
1	17	M	0.062	0.062	1.25	20.0	0.013	.	.	.	.	
1	18	B	0.187	1.125	4.06	3.6	2.228	.	.	.	.	
1	19	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	20	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
1	21	M	0.062	0.062	1.25	20.0	0.013	.	.	.	.	
1	22	F	0.000	0.062	1.63	26.0	0.013	.	.	.	.	
1	23	B	0.125	0.312	3.44	11.0	0.349	.	.	.	.	
1	24	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
1	25	M	0.062	0.125	0.31	2.5	.	.	X	.	.	
1	26	M	0.062	0.062	0.50	8.0	0.005	.	.	.	.	
1	27	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	28	F	0.000	0.125	0.87	7.0	0.028	.	.	.	.	
1	29	F	0.000	0.062	1.81	29.0	0.014	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-36

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Fatt	X-Ray
1	30	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	31	B	0.187	0.625	7.50	12.0	2.285	.	.	.	.	
1	32	C	0.062	0.625	1.56	2.5	0.159	.	.	.	.	
1	33	F	0.000	0.062	0.75	12.0	.	0.007	.	.	.	
2	34	F	0.000	0.062	6.13	98.0	0.049	.	.	.	.	
2	35	M	0.062	0.187	2.19	11.7	0.067	.	.	.	.	
2	36	F	0.000	0.062	2.19	35.0	0.017	.	.	.	.	
2	37	F	0.000	0.125	0.56	4.5	0.018	.	.	.	.	
2	38	F	0.000	0.062	0.50	8.0	.	.	X	.	.	
2	39	C	0.062	0.125	0.37	3.0	0.008	.	.	.	.	
2	40	M	0.062	0.187	0.62	3.3	0.019	.	.	.	.	
2	41	M	0.062	0.062	0.94	15.0	0.010	.	.	.	.	
2	42	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
2	43	B	0.125	0.312	2.69	8.6	0.273	.	.	.	.	
2	44	B	0.125	0.312	1.25	4.0	0.127	.	.	.	.	
2	45	C	0.062	0.312	0.62	2.0	0.032	.	.	.	.	
2	46	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
2	47	M	0.062	0.062	0.31	5.0	0.003	.	.	.	.	
2	48	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
2	49	M	0.062	0.187	1.25	6.7	0.038	.	.	.	.	
2	50	M	0.062	0.062	0.62	10.0	.	.	X	.	.	
2	51	M	0.062	0.625	1.87	3.0	0.190	.	.	.	.	
2	52	C	0.125	0.375	2.50	6.7	0.305	.	.	.	.	
2	53	C	0.062	0.125	1.31	10.5	0.027	.	.	.	.	
2	54	F	0.000	0.125	0.69	5.5	0.022	.	.	.	.	
2	55	M	0.062	0.187	1.75	9.3	0.053	.	.	.	.	
2	56	F	0.000	0.062	0.44	7.0	.	.	X	.	.	
2	57	F	0.000	0.062	0.81	13.0	.	.	X	.	.	
2	58	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-36

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambis	Hot Asbe	No Patt	X-Ray
2	59	M	0.062	0.187	1.25	6.7	0.038	.	.	.	.	
2	60	M	0.062	0.062	1.56	25.0	0.016	.	.	X	.	
2	61	B	0.062	0.625	3.12	5.0	.	.	.	.	.	
2	62	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
2	63	M	0.062	0.062	0.62	10.0	.	.	.	X	.	
2	64	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
2	65	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
2	66	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
2	67	B	0.062	0.062	1.00	16.0	0.010	.	.	.	.	
2	68	M	0.062	0.062	0.50	8.0	.	.	.	X	.	
2	69	F	0.000	0.062	6.56	105.0	0.052	.	.	.	.	
2	70	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
2	71	F	0.000	0.062	2.56	41.0	0.020	.	.	.	.	
2	72	M	0.062	0.062	0.37	6.0	.	.	.	X	.	
3	73	B	0.062	0.375	1.00	2.7	.	.	.	X	.	
3	74	F	0.000	0.062	3.25	52.0	0.026	.	.	.	.	
3	75	B	0.062	0.500	1.56	3.1	0.127	.	.	.	.	
3	76	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
3	77	F	0.000	0.062	3.44	55.0	0.027	.	.	.	.	
3	78	M	0.062	0.062	0.62	10.0	.	.	.	X	.	
3	79	F	0.000	0.062	1.94	31.0	0.015	.	.	.	.	
3	80	M	0.062	0.625	1.25	2.0	0.127	.	.	.	.	
3	81	C	0.062	0.187	0.75	4.0	.	.	.	X	.	
3	82	C	0.062	0.625	2.63	4.2	.	.	.	X	.	
3	83	B	0.062	0.125	2.50	20.0	0.051	.	.	.	.	
3	84	B	0.062	0.250	2.19	8.7	0.089	.	.	.	.	
3	85	C	0.062	1.875	3.12	1.7	0.952	.	.	.	.	
3	86	M	0.062	0.625	1.25	2.0	.	.	.	X	.	
3	87	F	0.000	0.062	2.50	40.0	0.020	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-36

Grd Opn	Obj	Str	Size (Micron) Perth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
3	88	C	0.062	0.312	1.25	4.0	.	.	X	.	.	
3	89	B	0.062	0.187	4.50	24.0	0.137	.	.	.	.	
3	90	C	0.062	0.125	0.62	5.0	0.013	.	.	.	.	
3	91	C	0.062	0.625	1.25	2.0	.	.	X	.	.	
3	92	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
3	93	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
3	94	F	0.000	0.062	0.69	11.0	.	0.006	.	.	.	
3	95	M	0.062	0.062	0.37	6.0	.	.	X	.	.	
3	96	M	0.062	0.250	0.62	2.5	0.025	.	.	.	.	
3	97	M	0.062	0.062	0.31	5.0	.	.	X	.	.	
			Total Mass (Picogram)=				9.726	0.030				
			Total Count =				71.	4.	22.	0.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-36 TABLE PREPARATION DATE: 26-MAY-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	31.	163917.	2327.7	0.07 ± 0.02	1.50 ± 1.55	23.29 ±25.24
	Amphibole	4.	21151.	161.2	0.06 ± 0.00	0.83 ± 0.29	13.25 ± 4.57
	Other	3.	15863.		0.06 ± 0.00	0.58 ± 0.20	9.33 ± 3.21
	All Fiber	38.	200931.		0.07 ± 0.02	1.36 ± 1.43	21.13 ±23.26
Bundle	Chrysotile	10.	52876.	30013.1	0.38 ± 0.31	3.07 ± 1.94	11.11 ± 7.09
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	3.	15863.		0.54 ± 0.14	2.00 ± 1.07	3.56 ± 1.26
	All Bundle	13.	68739.		0.42 ± 0.28	2.82 ± 1.80	9.37 ± 6.99
Cluster	Chrysotile	8.	42301.	8303.8	0.47 ± 0.59	1.58 ± 1.03	5.58 ± 4.31
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	4.	21151.		0.44 ± 0.22	1.47 ± 0.81	3.55 ± 1.04
	All Cluster	12.	63452.		0.46 ± 0.49	1.54 ± 0.92	4.91 ± 3.62
Matrix	Chrysotile	22.	116328.	10784.2	0.25 ± 0.30	1.07 ± 0.56	8.97 ± 6.39
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	12.	63452.		0.14 ± 0.16	0.68 ± 0.58	6.81 ± 2.94
	All Matrix	34.	179780.		0.21 ± .34	0.93 ± 0.53	8.21 ± 5.47

Sample Collection and Preparation Data

Air Volume	=	1.00 Cu M
Deposit Area	=	1.00 Sq Cm
Ashed Area	=	1.00 Sq Cm
Redeposit Area	=	1.00 Sq Cm

Grid Data

Grid ID	052182
Individual Grid Opening	.000063 Sq Cm
Number of Grid Openings	3
Film Magnification	20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-38

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
1	2	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	3	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	4	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	5	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
1	6	F	0.000	0.062	2.00	32.0	0.016	.	.	.	.	
1	7	M	0.062	0.187	0.75	4.0	.	.	X	.	.	
1	8	B	0.062	0.187	0.69	3.7	0.021	.	.	.	.	
1	9	M	0.062	0.062	1.25	20.0	0.013	.	.	.	.	
1	10	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	11	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	12	B	0.062	0.125	1.25	10.0	0.025	.	.	.	.	
1	13	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	14	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
1	15	F	0.000	0.062	0.31	5.0	.	.	X	.	.	
1	16	M	0.062	0.187	0.62	3.3	0.019	.	.	.	.	
1	17	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	18	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	19	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	20	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	21	B	0.125	0.375	1.56	4.2	.	.	X	.	.	
1	22	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	23	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	24	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	25	F	0.000	0.062	0.62	10.0	.	.	X	.	.	
1	26	F	0.000	0.125	0.81	6.5	0.026	.	.	.	.	
1	27	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	28	C	0.125	2.187	6.25	2.9	4.443	.	.	.	.	
1	29	F	0.000	0.062	1.63	26.0	0.013	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-38

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	30	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	31	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	32	C	0.062	0.250	0.50	2.0	0.020	.	.	.	.	
1	33	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	34	F	0.000	0.062	2.00	32.0	0.016	.	.	.	.	
1	35	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
1	36	M	0.062	0.125	0.50	4.0	0.010	.	.	.	.	
1	37	M	0.062	0.250	2.00	8.0	0.081	.	.	.	.	
1	38	F	0.000	0.062	0.75	12.0	.	.	X	.	.	
1	39	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	40	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
1	41	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	42	M	0.062	0.125	0.62	5.0	.	.	.	X	.	
1	43	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
1	44	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	45	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	46	C	0.062	0.125	0.62	5.0	.	.	X	.	.	
1	47	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	48	M	0.062	0.125	0.62	5.0	0.013	.	.	.	.	
1	49	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
1	50	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	51	F	0.000	0.062	0.25	4.0	.	.	X	.	.	
1	52	F	0.000	0.062	0.31	5.0	.	.	X	.	.	
2	53	M	0.062	0.375	3.75	10.0	0.229	.	.	.	.	
2	54	B	0.062	0.375	0.94	2.5	0.057	.	.	.	.	
2	55	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
2	56	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
2	57	M	0.062	0.250	1.56	6.2	0.063	.	.	.	.	
2	58	C	0.062	1.875	5.00	2.7	1.523	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-38

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
2	59	M	0.062	0.062	0.50	8.0	0.005	.	.	.	.	
2	60	F	0.000	0.062	0.44	7.0	.	.	X	.	.	
2	61	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
2	62	C	0.062	0.125	0.62	5.0	.	.	X	.	.	
2	63	F	0.000	0.187	0.94	5.0	0.067	.	.	.	.	
2	64	M	0.062	0.625	0.75	1.2	.	.	X	.	.	
2	65	C	0.062	0.250	0.50	2.0	.	.	X	.	.	
2	66	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
2	67	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
2	68	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
2	69	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	70	B	0.062	0.312	1.44	4.6	0.073	.	.	.	.	
2	71	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
2	72	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
2	73	F	0.000	0.062	1.44	23.0	0.011	.	.	.	.	
2	74	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
2	75	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
2	76	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	77	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
2	78	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
2	79	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
2	80	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
2	81	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
2	82	M	0.062	0.125	1.13	9.0	0.023	.	.	.	.	
2	83	C	0.062	0.125	1.38	11.0	0.028	.	.	.	.	
2	84	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
2	85	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
2	86	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
2	87	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-38

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
2	88	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	89	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
2	90	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	91	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
2	92	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
2	93	C	0.062	3.750	6.25	1.7	.	.	X	.	.	
2	94	M	0.062	0.062	0.50	8.0	0.005	.	.	.	.	
2	95	F	0.000	0.125	0.94	7.5	0.030	.	.	.	.	
2	96	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
2	97	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
2	98	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
2	99	C	0.062	2.500	3.12	1.2	.	.	X	.	.	
2	100	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
2	101	C	0.062	1.250	1.56	1.2	.	.	X	.	.	
2	102	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
			Total Mass (Picogram)=				7.134	0.000				
			Total Count			=	86.	0.	15.	1.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-38 TABLE PREPARATION DATE: 26-MAY-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	66.	469952.	3336.8	0.07 ± 0.02	0.70 ± 0.42	10.79 ± 6.73
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	6.	42723.		0.06 ± 0.00	0.45 ± 0.20	7.17 ± 3.19
	All Fiber	72.	512675.		0.07 ± 0.02	0.68 ± 0.41	10.49 ± 6.58
Bundle	Chrysotile	4.	28482.	1256.5	0.25 ± 0.11	1.08 ± 0.33	5.19 ± 3.32
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	1.	7120.		0.37 ± 0.00	1.56 ± 0.00	4.17 ± 0.00
	All Bundle	5.	35602.		0.28 ± 0.11	1.17 ± 0.36	4.99 ± 2.91
Cluster	Chrysotile	4.	28482.	42830.0	1.11 ± 1.07	3.28 ± 2.78	4.63 ± 4.26
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	6.	42723.		1.33 ± 1.50	2.11 ± 2.26	2.69 ± 1.81
	All Cluster	10.	71205.		1.24 ± 1.29	2.58 ± 2.40	3.47 ± 2.98
Matrix	Chrysotile	12.	85446.	3371.8	0.15 ± 0.10	1.14 ± 0.95	8.47 ± 4.31
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	3.	21361.		0.31 ± 0.27	0.71 ± 0.07	3.40 ± 1.97
	All Matrix	15.	106807.		0.18 ± 0.15	1.05 ± 0.87	7.45 ± 4.42

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/E-5
Individual Grid Opening = 0.000070 Sq Cm
Number of Grid Openings = 2
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-39 (210) A:L0

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	2	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	3	F	0.000	0.125	0.62	5.0	.	.	X	.	.	
1	4	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
1	5	B	0.062	0.187	1.38	7.3	0.042	.	.	.	.	
1	6	M	0.062	0.062	0.50	8.0	0.005	.	.	.	.	
1	7	M	0.062	0.375	1.87	5.0	0.114	.	.	.	.	
1	8	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	9	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	10	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	11	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	12	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
1	13	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	14	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	15	M	0.062	0.062	0.44	7.0	0.004	.	.	.	.	
1	16	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
1	17	B	0.187	1.000	2.50	2.5	1.219	.	.	.	.	
2	18	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
2	19	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
2	20	F	0.000	0.062	0.62	10.0	.	.	X	.	.	
2	21	F	0.000	0.062	0.44	7.0	.	.	X	.	.	
2	22	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	
2	23	B	0.125	0.312	2.13	6.8	0.216	.	.	.	.	
2	24	B	0.062	0.250	1.38	5.5	.	.	X	.	.	
2	25	B	0.125	0.250	1.87	7.5	.	.	X	.	.	
2	26	C	0.187	1.250	3.12	2.5	1.904	.	.	.	.	
2	27	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
2	28	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	29	F	0.000	0.062	1.38	22.0	0.011	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA :
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-39

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
2	30	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
2	31	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	32	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
2	33	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
2	34	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
2	35	M	0.062	0.312	0.75	2.4	0.038	.	.	.	.	
3	36	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
3	37	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
4	38	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
4	39	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
4	40	M	0.062	0.062	0.37	6.0	0.004	.	.	.	.	
4	41	C	0.062	0.312	0.62	2.0	0.032	.	.	.	.	
4	42	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
4	43	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
4	44	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
4	45	B	0.062	0.250	1.69	6.8	0.069	.	.	.	.	
5	46	F	0.000	0.125	3.50	28.0	0.112	.	.	.	.	
5	47	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
5	48	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
5	49	M	0.062	0.125	0.75	6.0	0.015	.	.	.	.	
5	50	M	0.062	0.062	0.69	11.0	0.007	.	.	.	.	
5	51	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
5	52	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
6	53	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
6	54	C	0.062	0.312	1.13	3.6	0.057	.	.	.	.	
6	55	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
6	56	C	0.062	0.500	1.25	2.5	0.102	.	.	.	.	
6	57	F	0.000	0.125	1.19	9.5	0.038	.	.	.	.	
6	58	M	0.062	0.125	1.87	15.0	0.038	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-39

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
7	59	B	0.062	0.250	1.13	4.5	0.046	.	.	.	.	
7	60	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
7	61	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
7	62	M	0.062	0.625	2.50	4.0	0.254	.	.	.	.	
7	63	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
7	64	F	0.000	0.062	1.50	24.0	0.012	.	.	.	.	
7	65	F	0.000	0.062	1.06	17.0	0.008	.	.	.	.	
7	66	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
7	67	C	0.062	0.312	0.62	2.0	.	.	X	.	.	
7	68	B	0.062	0.125	1.44	11.5	0.029	.	.	.	.	
7	69	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
7	70	F	0.000	0.125	0.31	2.5	.	.	X	.	.	
7	71	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
7	72	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
7	73	B	0.125	0.625	5.00	8.0	.	.	X	.	.	
7	74	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
7	75	B	0.125	0.312	0.94	3.0	.	.	X	.	.	
7	76	B	0.125	0.312	0.94	3.0	.	.	X	.	.	
7	77	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
7	78	B	0.125	0.312	1.13	3.6	.	.	X	.	.	
7	79	B	0.125	0.312	1.38	4.4	.	.	X	.	.	
7	80	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
7	81	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
7	82	F	0.000	0.062	0.25	4.0	.	.	X	.	.	
7	83	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
8	84	M	0.062	0.125	1.25	10.0	.	.	X	.	.	
8	85	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
8	86	F	0.000	0.062	0.94	15.0	.	.	.	X	.	
8	87	F	0.000	0.062	1.06	17.0	0.008	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-39

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
8	88	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
8	89	C	0.062	0.312	0.37	1.2	.	.	X	.	.	
8	90	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
9	91	C	0.062	0.250	0.62	2.5	0.025	.	.	.	.	
9	92	M	0.062	0.187	0.50	2.7	0.015	.	.	.	.	
9	93	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
9	94	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
9	95	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
9	96	F	0.000	0.062	0.94	15.0	.	.	.	X	.	
9	97	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
9	98	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
10	99	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
10	100	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
			Total Mass (Picogram)=				4.731	0.000				
			Total Count =				83.	0.	15.	2.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-39

TABLE PREPARATION DATE: 26-MAY-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	59.	84022.	678.7	0.06 ± 0.01	0.77 ± 0.54	11.75 ± 6.70
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	7.	9969.		0.08 ± 0.03	0.59 ± 0.28	8.36 ± 5.12
	All Fiber	66.	93990.		0.07 ± 0.02	0.75 ± 0.52	11.39 ± 6.60
Bundle	Chrysotile	6.	8545.	2306.9	0.35 ± 0.32	1.71 ± 0.51	6.56 ± 3.03
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	7.	9969.		0.34 ± 0.13	1.80 ± 1.45	5.00 ± 2.07
	All Bundle	13.	18513.		0.35 ± 0.23	1.76 ± 1.08	5.72 ± 2.57
Cluster	Chrysotile	5.	7120.	3019.3	0.52 ± 0.42	1.35 ± 1.03	2.62 ± 0.59
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	2.	2848.		0.31 ± 0.00	0.50 ± 0.18	1.60 ± 0.57
	All Cluster	7.	9969.		0.46 ± 0.36	1.11 ± 0.94	2.33 ± 0.73
Matrix	Chrysotile	13.	18513.	732.2	0.17 ± 0.17	0.93 ± 0.68	7.47 ± 3.65
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	1.	1424.		0.12 ± 0.00	1.25 ± 0.00	10.00 ± 0.00
	All Matrix	14.	19937.		0.17 ± 0.17	0.96 ± 0.66	7.65 ± 3.57

Sample Collection and Preparation Data

Air Volume	=	1.00 Cu M
Deposit Area	=	1.00 Sq Cm
Ashed Area	=	1.00 Sq Cm
Redeposit Area	=	1.00 Sq Cm

Grid Data

Grid ID: 052182/6A		
Individual Grid Opening	=	0.000070 Sq Cm
Number of Grid Openings	=	10
Film Magnification	=	20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-41 | 4/10

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Asbid	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
1	2	B	0.187	0.375	3.50	9.3	0.640	.	.	.	.	
1	3	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
1	4	C	0.062	0.312	0.62	2.0	0.032	.	.	.	.	
1	5	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	6	B	0.062	0.250	3.12	12.5	.	.	X	.	.	
1	7	B	0.187	0.875	2.69	3.1	1.146	.	.	.	.	
1	8	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	9	B	0.062	0.500	2.50	5.0	0.203	.	.	.	.	
1	10	M	0.062	0.250	1.25	5.0	.	.	X	.	.	
2	11	F	0.000	0.062	2.94	47.0	0.023	.	.	.	.	
2	12	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
2	13	M	0.062	0.062	2.63	42.0	0.027	.	.	.	.	
2	14	F	0.000	0.062	1.13	18.0	.	.	.	X	.	
2	15	F	0.000	0.062	1.81	29.0	0.014	.	.	.	.	
2	16	C	0.062	0.625	2.50	4.0	0.254	.	.	.	.	
2	17	F	0.000	0.187	2.50	13.3	.	0.207	.	.	.	
2	18	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
2	19	M	0.062	0.062	0.37	6.0	0.004	.	.	.	.	
2	20	B	0.125	0.625	1.87	3.0	.	.	X	.	.	
2	21	M	0.062	0.062	0.62	10.0	.	.	X	.	.	
2	22	F	0.000	0.062	1.44	23.0	0.011	.	.	.	.	
2	23	F	0.000	0.062	2.44	39.0	0.019	.	.	.	.	
2	24	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
2	25	B	0.062	0.250	3.50	14.0	0.142	.	.	.	.	
2	26	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
2	27	F	0.000	0.125	0.94	7.5	0.030	.	.	.	.	
2	28	F	0.000	0.062	1.50	24.0	0.012	.	.	.	.	
2	29	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-41

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
2	30	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	31	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
2	32	C	0.062	0.125	3.75	30.0	0.076	.	.	.	.	
2	33	C	0.062	0.187	2.38	12.7	0.072	.	.	.	.	
3	34	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
3	35	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
3	36	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
3	37	M	0.062	0.062	0.31	5.0	.	.	X	.	.	
3	38	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
3	39	C	0.062	0.250	0.75	3.0	.	.	X	.	.	
3	40	F	0.000	0.125	2.50	20.0	0.080	.	.	.	.	
3	41	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
3	42	C	0.062	0.187	0.62	3.3	.	.	X	.	.	
3	43	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
3	44	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
3	45	M	0.062	0.062	0.50	8.0	0.005	.	.	.	.	
3	46	F	0.000	0.125	0.44	3.5	0.014	.	.	.	.	
4	47	B	0.062	0.187	1.87	10.0	0.057	.	.	.	.	
4	48	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
4	49	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
4	50	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
4	51	M	0.062	0.062	0.50	8.0	0.005	.	.	.	.	
4	52	B	0.062	0.187	1.13	6.0	0.034	.	.	.	.	
4	53	B	0.062	0.312	0.62	2.0	0.032	.	.	.	.	
4	54	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
4	55	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
4	56	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
4	57	F	0.000	0.062	1.44	23.0	0.011	.	.	.	.	
4	58	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-41

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
4	59	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
5	60	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
5	61	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
5	62	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
5	63	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
5	64	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
5	65	F	0.000	0.062	0.37	6.0	.	.	X	.	.	
5	66	B	0.125	0.125	1.25	10.0	0.051	.	.	.	.	
5	67	M	0.062	0.062	1.50	24.0	0.015	.	.	.	.	
5	68	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
5	69	M	0.062	0.062	0.56	9.0	.	.	X	.	.	
5	70	F	0.000	0.062	1.31	21.0	0.010	.	.	.	.	
5	71	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
5	72	M	0.062	0.125	1.25	10.0	0.025	.	.	.	.	
5	73	M	0.062	0.062	0.50	8.0	0.005	.	.	.	.	
5	74	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
5	75	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
5	76	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
5	77	F	0.000	0.062	0.37	6.0	.	.	X	.	.	
5	78	C	0.062	0.250	0.62	2.5	0.025	.	.	.	.	
5	79	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
5	80	F	0.000	0.062	0.37	6.0	.	.	X	.	.	
5	81	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
5	82	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
5	83	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
5	84	C	0.062	0.625	1.25	2.0	.	.	X	.	.	
6	85	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
6	86	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
6	87	B	0.125	0.312	1.87	6.0	.	.	X	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-41

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
6	88	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
6	89	M	0.062	0.062	0.75	12.0	0.008	.	.	.	.	
6	90	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
6	91	M	0.062	0.187	1.56	8.3	0.048	.	.	.	.	
6	92	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
6	93	F	0.000	0.125	0.69	5.5	0.022	.	.	.	.	
6	94	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
6	95	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
6	96	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
6	97	M	0.062	0.062	0.31	5.0	0.003	.	.	.	.	
6	98	M	0.062	0.062	1.31	21.0	0.013	.	.	.	.	
6	99	M	0.062	0.062	1.56	25.0	0.016	.	.	.	.	
6	100	B	0.062	0.125	1.25	10.0	0.025	.	.	.	.	
6	101	F	0.000	0.062	3.75	60.0	0.030	.	.	.	.	
6	102	F	0.000	0.062	0.69	11.0	.	.	X	.	.	
6	103	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
6	104	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
6	105	M	0.062	0.062	0.94	15.0	.	.	X	.	.	
6	106	B	0.062	0.125	1.31	10.5	.	.	X	.	.	
6	107	F	0.000	0.062	0.62	10.0	.	.	.	X	.	
6	108	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
6	109	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
			Total Mass (Picogram)=				3.534	0.207				
			Total Count			=	90.	1.	16.	2.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-41 TABLE PREPARATION DATE: 26-MAY-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	64.	151172.	1344.8	0.07 ± 0.02	0.90 ± 0.71	13.85 ±11.02
	Amphibole	1.	2362.	489.1	0.19 ± 0.00	2.50 ± 0.00	13.33 ± 0.00
	Other	6.	14172.		0.06 ± 0.00	0.59 ± 0.30	9.50 ± 4.72
	All Fiber	71.	167706.		0.07 ± 0.02	0.90 ± 0.71	13.48 ±10.60
Bundle	Chrysotile	9.	21259.	5505.6	0.33 ± 0.24	2.03 ± 1.06	7.71 ± 3.91
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	4.	9448.		0.33 ± 0.21	2.05 ± 0.77	8.00 ± 4.30
	All Bundle	13.	30707.		0.33 ± 0.22	2.04 ± 0.95	7.80 ± 3.85
Cluster	Chrysotile	5.	11810.	1085.5	0.30 ± 0.19	1.98 ± 1.34	10.23 ±11.86
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	3.	7086.		0.35 ± 0.24	0.87 ± 0.33	2.78 ± 0.69
	All Cluster	8.	18896.		0.32 ± 0.20	1.56 ± 1.18	7.44 ± 9.77
Matrix	Chrysotile	12.	28345.	410.8	0.08 ± 0.04	1.06 ± 0.69	14.78 ±11.09
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	5.	11810.		0.10 ± 0.08	0.74 ± 0.36	8.80 ± 4.15
	All Matrix	17.	40155.		0.08 ± 0.05	0.97 ± 0.62	13.02 ± 9.83

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/8A
Individual Grid Opening = 0.000071 Sq Cm
Number of Grid Openings = 6
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX) .
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-43 (234) H:/20

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	0.44	7.0	.	.	X	.	.	
1	2	F	0.000	0.250	1.56	6.2	.	0.230	.	.	.	
1	3	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	4	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	5	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	6	F	0.000	0.125	0.44	3.5	.	.	.	X	.	
2	7	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
3	8	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
3	9	F	0.000	0.062	2.38	38.0	0.019	.	.	.	.	
3	10	F	0.000	0.062	0.31	5.0	.	.	X	.	.	
3	11	F	0.000	0.062	0.37	6.0	.	.	X	.	.	
4	12	F	0.000	0.125	0.50	4.0	0.016	.	.	.	.	
6	13	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
8	14	F	0.000	0.125	1.06	8.5	.	.	X	.	.	
8	15	F	0.000	0.062	0.44	7.0	.	.	.	X	.	
9	16	F	0.000	0.062	0.62	10.0	.	.	X	.	.	
9	17	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
9	18	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
9	19	B	0.125	0.750	1.87	2.5	.	.	X	.	.	
9	20	F	0.000	0.062	0.56	9.0	.	.	X	.	.	
9	21	F	0.000	0.062	0.62	10.0	.	.	X	.	.	
10	22	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
			Total Mass (Picogram)=				0.081	0.230				
			Total Count			=	11.	1.	8.	2.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-43 TABLE PREPARATION DATE: 26-MAY-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	10.	13639.	102.0	0.07 ± 0.02	0.79 ± 0.58	12.20 ± 9.55
	Amphibole	1.	1364.	313.8	0.25 ± 0.00	1.56 ± 0.00	6.25 ± 0.00
	Other	9.	12275.		0.08 ± 0.03	0.54 ± 0.22	7.33 ± 2.25
	All Fiber	20.	27278.		0.08 ± 0.05	0.72 ± 0.48	9.71 ± 7.21
Bundle	Chrysotile	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	1.	1364.		0.75 ± 0.00	1.87 ± 0.00	2.50 ± 0.00
	All Bundle	1.	1364.		0.75 ± 0.00	1.87 ± 0.00	2.50 ± 0.00
Matrix	Chrysotile	1.	1364.	8.7	0.06 ± 0.00	0.62 ± 0.00	10.00 ± 0.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	0.	0.		0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	All Matrix	1.	1364.		0.06 ± 0.00	0.62 ± 0.00	10.00 ± 0.00

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/10A
Individual Grid Opening = 0.000073 Sq Cm
Number of Grid Openings = 10
Film Magnification = 20000

2667

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-45(276)

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
1	2	F	0.000	0.062	0.62	10.0	.	.	X	.	.	
1	3	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	4	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
1	5	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	6	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	7	F	0.000	0.062	0.31	5.0	.	.	.	.	X	
1	8	B	0.062	0.187	0.75	4.0	0.023	.	.	.	.	
1	9	F	0.000	0.062	0.44	7.0	.	.	X	.	.	
1	10	F	0.000	0.062	0.81	13.0	.	0.007	.	.	.	
1	11	B	0.062	0.375	3.75	10.0	0.229	.	.	.	.	
1	12	M	0.062	0.125	0.62	5.0	.	.	X	.	.	
1	13	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	14	F	0.000	0.062	2.38	38.0	0.019	.	.	.	.	
1	15	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
1	16	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	17	F	0.000	0.125	0.37	3.0	0.012	.	.	.	.	
1	18	F	0.000	0.125	0.75	6.0	0.024	.	.	.	.	
1	19	M	0.062	0.125	0.62	5.0	.	.	X	.	.	
2	20	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
2	21	M	0.062	0.062	0.81	13.0	.	.	X	.	.	
2	22	M	0.062	0.062	0.69	11.0	.	.	X	.	.	
2	23	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	24	F	0.000	0.062	0.75	12.0	.	.	X	.	.	
2	25	F	0.000	0.062	0.31	5.0	.	.	.	X	.	
2	26	M	0.062	0.062	0.62	10.0	.	.	X	.	.	
2	27	F	0.000	0.062	0.31	5.0	.	.	X	.	.	
2	28	F	0.000	0.062	1.19	19.0	.	0.011	.	.	.	
2	29	F	0.000	0.125	0.62	5.0	0.020	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-45

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
2	30	B	0.125	0.312	2.50	8.0	0.254	.	.	.	.	
2	31	F	0.000	0.125	0.69	5.5	0.022	.	.	.	.	
2	32	B	0.125	0.250	1.87	7.5	0.152	.	.	.	.	
2	33	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
3	34	M	0.062	0.062	0.75	12.0	0.008	.	.	.	.	
3	35	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
3	36	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
3	37	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
3	38	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
3	39	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
3	40	M	0.062	0.062	0.62	10.0	.	.	X	.	.	
3	41	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
3	42	M	0.062	0.062	1.25	20.0	0.013	.	.	.	.	
3	43	F	0.000	0.125	0.62	5.0	0.020	.	.	.	.	
3	44	M	0.062	0.062	0.94	15.0	0.010	.	.	.	.	
3	45	F	0.000	0.062	0.56	9.0	.	0.005	.	.	.	
3	46	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	
3	47	C	0.062	0.187	0.62	3.3	0.019	.	.	.	.	
3	48	M	0.062	0.125	0.62	5.0	0.013	.	.	.	.	
4	49	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
4	50	F	0.000	0.062	0.37	6.0	.	.	.	X	.	
4	51	B	0.125	0.625	1.38	2.2	0.279	.	.	.	.	
4	52	M	0.062	0.062	1.56	25.0	0.016	.	.	.	.	
4	53	B	0.062	0.312	6.69	21.4	0.340	.	.	.	.	
4	54	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
4	55	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
4	56	C	0.062	0.625	0.94	1.5	0.095	.	.	.	.	
5	57	B	0.125	0.187	1.50	8.0	0.091	.	.	.	.	
5	58	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-45

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
5	59	F	0.000	0.125	1.31	10.5	0.042	.	.	.	.	
5	60	F	0.000	0.062	0.62	10.0	.	0.006	.	.	.	
5	61	F	0.000	0.125	0.94	7.5	0.030	.	.	.	.	
5	62	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
5	63	F	0.000	0.125	0.44	3.5	0.014	.	.	.	.	
5	64	F	0.000	0.125	1.31	10.5	0.042	.	.	.	.	
5	65	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
5	66	B	0.062	0.187	1.87	10.0	0.057	.	.	.	.	
6	67	F	0.000	0.062	1.06	17.0	0.008	.	.	.	.	
6	68	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
6	69	F	0.000	0.062	1.13	18.0	.	.	X	.	.	
6	70	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
7	71	M	0.062	0.312	1.13	3.6	.	.	X	.	.	
7	72	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
7	73	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
7	74	F	0.000	0.062	0.62	10.0	.	.	.	X	.	
7	75	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
7	76	M	0.062	0.062	0.56	9.0	0.006	.	.	.	.	
7	77	M	0.062	0.125	0.50	4.0	.	.	X	.	.	
8	78	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
8	79	B	0.062	0.312	1.25	4.0	.	.	X	.	.	
8	80	B	0.062	0.250	1.94	7.8	.	.	X	.	.	
8	81	F	0.000	0.062	0.56	9.0	.	.	.	X	.	
8	82	C	0.062	0.250	0.56	2.3	.	.	X	.	.	
8	83	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
8	84	F	0.000	0.062	0.37	6.0	.	0.003	.	.	.	
8	85	F	0.000	0.125	0.69	5.5	0.022	.	.	.	.	
8	86	B	0.062	0.375	6.38	17.0	0.388	.	.	.	.	
9	87	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-45

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
9	88	M	0.062	0.062	0.50	8.0	.	.	X	.	.	
9	89	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
9	90	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
9	91	M	0.062	0.062	0.75	12.0	0.008	.	.	.	.	
9	92	F	0.000	0.062	1.06	17.0	0.008	.	.	.	.	
9	93	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
9	94	F	0.000	0.062	0.31	5.0	.	0.003	.	.	.	
9	95	F	0.000	0.062	0.31	5.0	.	.	.	.	X	
9	96	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
9	97	F	0.000	0.062	1.81	29.0	0.014	.	.	.	.	
9	98	M	0.062	0.062	0.62	10.0	.	.	X	.	.	
9	99	F	0.000	0.062	3.75	60.0	0.030	.	.	.	.	
9	100	B	0.062	0.312	5.00	16.0	0.254	.	.	.	.	
9	101	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
9	102	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
			Total Mass (Picogram)=				2.788	0.036				
			Total Count			=	72.	6.	18.	4.	2.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-45 TABLE PREPARATION DATE: 26-MAY-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	51.	84113.	860.9	0.07 ± 0.03	0.83 ± 0.59	12.02 ± 9.66
	Amphibole	6.	9896.	58.8	0.06 ± 0.00	0.65 ± 0.32	10.33 ± 5.13
	Other	11.	18142.		0.06 ± 0.00	0.52 ± 0.25	8.36 ± 4.06
	All Fiber	68.	112150.		0.07 ± 0.02	0.76 ± 0.54	11.28 ± 8.72
Bundle	Chrysotile	10.	16493.	3409.7	0.31 ± 0.13	3.17 ± 2.16	10.41 ± 6.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	2.	3299.		0.28 ± 0.04	1.59 ± 0.49	5.88 ± 2.65
	All Bundle	12.	19791.		0.31 ± 0.12	2.91 ± 2.05	9.65 ± 5.77
Cluster	Chrysotile	2.	3299.	188.4	0.41 ± 0.31	0.78 ± 0.22	2.42 ± 1.30
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	1.	1649.		0.25 ± 0.00	0.56 ± 0.00	2.25 ± 0.00
	All Cluster	3.	4948.		0.35 ± 0.24	0.71 ± 0.20	2.36 ± 0.92
Matrix	Chrysotile	9.	14843.	139.2	0.07 ± 0.02	0.85 ± 0.34	13.11 ± 6.09
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	10.	16493.		0.11 ± 0.08	0.68 ± 0.18	7.96 ± 3.32
	All Matrix	19.	31336.		0.09 ± 0.06	0.76 ± 0.28	10.40 ± 5.38

Sample Collection and Preparation Data

Air Volume	=	1.00 Cu M
Deposit Area	=	1.00 Sq Cm
Ashed Area	=	1.00 Sq Cm
Redeposit Area	=	1.00 Sq Cm

Grid Data

Grid ID: 052182/B-7
Individual Grid Opening = 0.000067 Sq Cm
Number of Grid Openings = 9
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA .
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-40

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambis	Not Asbe	No Patt	X-Ray
1	1	M	0.062	0.187	0.75	4.0	0.023	.	.	.	.	
1	2	F	0.000	0.062	2.19	35.0	0.017	.	.	.	.	
1	3	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	4	B	0.062	0.125	0.50	4.0	0.010	.	.	.	.	
1	5	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	6	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
1	7	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
2	8	B	0.062	0.312	1.56	5.0	0.079	.	.	.	.	
2	9	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
2	10	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
2	11	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
2	12	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
2	13	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
2	14	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
2	15	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
2	16	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	17	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	18	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
2	19	F	0.000	0.062	0.31	5.0	.	.	.	X	.	
3	20	M	0.062	0.125	0.62	5.0	0.013	.	.	.	.	
3	21	F	0.000	0.062	0.87	14.0	.	0.008	.	.	.	
3	22	M	0.062	0.625	2.50	4.0	0.254	.	.	.	.	
3	23	C	0.062	0.250	1.25	5.0	.	.	X	.	.	
3	24	M	0.062	0.062	0.50	8.0	0.005	.	.	.	.	
3	25	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	
3	26	M	0.187	1.875	2.50	1.3	2.285	.	.	.	.	
3	27	M	0.062	0.062	0.62	10.0	.	.	X	.	.	
3	28	F	0.000	0.125	0.62	5.0	0.020	.	.	.	.	
4	29	C	0.062	0.625	0.75	1.2	.	.	X	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-40

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
4	30	C	0.062	0.250	0.62	2.5	.	.	X	.	.	
4	31	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
4	32	M	0.062	0.125	0.50	4.0	0.010	.	.	.	.	
4	33	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
4	34	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
4	35	B	0.062	0.375	1.13	3.0	0.069	.	.	.	.	
4	36	M	0.062	0.062	0.69	11.0	0.007	.	.	.	.	
4	37	B	0.125	0.187	1.25	6.7	.	.	X	.	.	
4	38	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
4	39	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
4	40	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
4	41	F	0.000	0.062	3.75	60.0	0.030	.	.	.	.	
4	42	M	0.062	0.125	1.25	10.0	0.025	.	.	.	.	
4	43	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
4	44	M	0.062	0.250	0.94	3.7	0.038	.	.	.	.	
4	45	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
4	46	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
4	47	B	0.062	0.187	1.87	10.0	0.057	.	.	.	.	
4	48	F	0.000	0.125	1.56	12.5	0.050	.	.	.	.	
4	49	B	0.062	0.187	1.81	9.7	0.055	.	.	.	.	
4	50	C	0.062	0.250	0.31	1.2	.	.	X	.	.	
4	51	F	0.000	0.062	0.75	12.0	.	.	.	X	.	
4	52	F	0.000	0.062	0.62	10.0	.	.	.	X	.	
4	53	C	0.062	0.125	0.62	5.0	0.013	.	.	.	.	
4	54	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
4	55	M	0.062	0.062	0.37	6.0	.	.	X	.	.	
4	56	M	0.062	0.062	1.63	26.0	0.017	.	.	.	.	
4	57	C	0.062	0.625	1.87	3.0	.	.	X	.	.	
4	58	B	0.062	0.187	4.37	23.3	.	.	X	.	.	

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PB85
188878

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-40

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
4	59	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
4	60	C	0.062	0.625	1.25	2.0	.	.	X	.	.	
5	61	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
5	62	B	0.062	0.500	3.38	6.8	.	.	X	.	.	
5	63	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
5	64	F	0.000	0.062	0.37	6.0	.	.	.	X	.	
5	65	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
5	66	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
6	67	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	
6	68	M	0.062	0.062	0.50	8.0	0.005	.	.	.	.	
6	69	B	0.062	0.312	11.88	38.0	0.603	.	.	.	.	
6	70	B	0.062	0.312	8.44	27.0	0.428	.	.	.	.	
6	71	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
7	72	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
8	73	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
8	74	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
8	75	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
8	76	B	0.062	0.187	6.87	36.7	0.209	.	.	.	.	
8	77	B	0.062	0.500	7.50	15.0	0.609	.	.	.	.	
8	78	F	0.000	0.062	1.38	22.0	0.011	.	.	.	.	
8	79	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
8	80	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
8	81	M	0.062	0.062	0.31	5.0	.	.	X	.	.	
8	82	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
8	83	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
9	84	C	0.062	0.125	0.50	4.0	.	.	X	.	.	
9	85	B	0.062	0.125	0.56	4.5	.	.	X	.	.	
9	86	M	0.062	0.125	0.62	5.0	0.013	.	.	.	.	
10	87	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-40

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
10	88	B	0.062	0.187	1.44	7.7	0.044	.	.	.	.	
			Total Mass (Picogram)=				5.229	0.008				
			Total Count =				69.	1.	14.	4.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-40 TABLE PREPARATION DATE: 26-MAY-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	46.	64570.	501.1	0.07 ± 0.01	0.83 ± 0.64	12.90 ±10.09
	Amphibole	1.	1404.	11.3	0.06 ± 0.00	0.87 ± 0.00	14.00 ± 0.00
	Other	4.	5615.		0.06 ± 0.00	0.52 ± 0.21	8.25 ± 3.30
	All Fiber	51.	71589.		0.06 ± 0.01	0.81 ± 0.61	12.56 ± 9.69
Bundle	Chrysotile	10.	14037.	3038.4	0.27 ± 0.11	4.30 ± 4.00	15.60 ±13.38
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	4.	5615.		0.25 ± 0.17	2.39 ± 1.78	10.31 ± 8.74
	All Bundle	14.	19652.		0.26 ± 0.13	3.75 ± 3.55	14.09 ±12.15
Cluster	Chrysotile	1.	1404.	17.8	0.12 ± 0.00	0.62 ± 0.00	5.00 ± 0.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	7.	9826.		0.39 ± 0.22	0.94 ± 0.55	2.71 ± 1.41
	All Cluster	8.	11230.		0.36 ± 0.23	0.90 ± 0.52	2.99 ± 1.54
Matrix	Chrysotile	12.	16844.	3782.4	0.31 ± 0.52	1.08 ± 0.74	7.51 ± 6.48
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	3.	4211.		0.06 ± 0.00	0.44 ± 0.17	7.00 ± 2.65
	All Matrix	15.	21056.		0.26 ± 0.47	0.95 ± 0.71	7.41 ± 5.84

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/7A
Individual Grid Opening = 0.000071 Sq Cm
Number of Grid Openings = 10
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-42

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	2	C	0.062	0.125	0.62	5.0	.	.	X	.	.	
1	3	B	0.062	0.125	0.44	3.5	0.009	.	.	.	.	
1	4	B	0.062	0.250	0.75	3.0	.	.	X	.	.	
1	5	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
1	6	B	0.062	0.250	1.56	6.2	0.063	.	.	.	.	
1	7	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	8	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	9	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	10	C	0.062	0.125	0.37	3.0	.	.	X	.	.	
1	11	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	12	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
1	13	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	14	M	0.062	0.062	0.44	7.0	.	.	X	.	.	
1	15	F	0.000	0.062	1.63	26.0	0.013	.	.	.	.	
1	16	B	0.062	0.125	1.31	10.5	.	.	X	.	.	
1	17	B	0.062	0.187	1.75	9.3	.	.	X	.	.	
1	18	F	0.000	0.125	0.37	3.0	0.012	.	.	.	.	
2	19	B	0.062	0.187	0.75	4.0	0.023	.	.	.	.	
2	20	F	0.000	0.062	2.25	36.0	0.018	.	.	.	.	
2	21	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
2	22	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
2	23	M	0.062	0.625	0.62	1.0	0.063	.	.	.	.	
2	24	B	0.062	0.312	1.87	6.0	0.095	.	.	.	.	
2	25	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
2	26	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	27	F	0.000	0.062	1.06	17.0	0.008	.	.	.	.	
2	28	M	0.062	0.187	2.50	13.3	0.076	.	.	.	.	
2	29	B	0.062	0.625	1.31	2.1	0.133	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-42

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
2	30	F	0.000	0.062	0.62	10.0	.	.	.	X	.	
2	31	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
3	32	C	0.062	0.375	0.62	1.7	.	.	X	.	.	
3	33	F	0.000	0.062	0.37	6.0	.	.	.	X	.	
3	34	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
3	35	B	0.062	0.187	1.13	6.0	0.034	.	.	.	.	
3	36	M	0.062	0.062	5.13	82.0	0.052	.	.	.	.	
3	37	M	0.062	0.250	0.62	2.5	0.025	.	.	.	.	
3	38	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
3	39	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
3	40	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
3	41	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	
3	42	C	0.062	0.500	1.87	3.7	0.152	.	.	.	.	
3	43	M	0.062	0.312	0.94	3.0	0.048	.	.	.	.	
3	44	B	0.062	0.312	1.38	4.4	0.070	.	.	.	.	
3	45	M	0.062	0.125	0.62	5.0	0.013	.	.	.	.	
3	46	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
3	47	M	0.062	0.250	0.75	3.0	0.030	.	.	.	.	
3	48	F	0.000	0.125	0.81	6.5	.	0.030	.	.	.	
3	49	F	0.000	0.062	1.94	31.0	0.015	.	.	.	.	
3	50	M	0.062	0.125	1.38	11.0	0.028	.	.	.	.	
3	51	M	0.062	0.125	0.62	5.0	.	.	X	.	.	
4	52	C	0.062	0.312	0.62	2.0	.	.	X	.	.	
4	53	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
4	54	F	0.000	0.062	0.44	7.0	.	.	X	.	.	
4	55	F	0.000	0.062	0.19	3.0	.	.	.	.	X	
4	56	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
4	57	M	0.062	0.187	0.62	3.3	.	.	X	.	.	
4	58	M	0.062	0.125	0.31	2.5	.	.	X	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-42

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
4	59	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
4	60	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
4	61	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
4	62	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
4	63	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
4	64	F	0.000	0.062	4.44	71.0	0.035	.	.	.	.	
4	65	B	0.062	0.187	0.62	3.3	0.019	.	.	.	.	
4	66	M	0.062	0.062	0.31	5.0	.	.	X	.	.	
4	67	M	0.062	0.062	0.31	5.0	0.003	.	.	.	.	
4	68	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
4	69	F	0.000	0.062	2.25	36.0	0.018	.	.	.	.	
4	70	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
4	71	B	0.062	0.125	1.25	10.0	0.025	.	.	.	.	
4	72	C	0.062	0.250	0.94	3.7	.	.	X	.	.	
4	73	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
4	74	M	0.062	0.062	0.69	11.0	.	.	X	.	.	
4	75	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
4	76	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
4	77	F	0.000	0.062	0.37	6.0	.	.	X	.	.	
4	78	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
4	79	C	0.062	0.125	0.62	5.0	0.013	.	.	.	.	
4	80	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
4	81	M	0.062	0.062	0.31	5.0	.	.	X	.	.	
4	82	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
4	83	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
4	84	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
4	85	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
4	86	F	0.000	0.062	3.12	50.0	0.025	.	.	.	.	
5	87	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-42

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
5	88	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
5	89	M	0.062	0.250	0.75	3.0	.	.	X	.	.	
5	90	M	0.062	0.125	1.63	13.0	0.033	.	.	.	.	
5	91	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
5	92	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
5	93	C	0.062	0.187	0.62	3.3	0.019	.	.	.	.	
5	94	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
5	95	C	0.062	0.250	0.94	3.7	0.038	.	.	.	.	
5	96	C	0.062	0.625	1.25	2.0	0.127	.	.	.	.	
5	97	B	0.125	0.500	7.00	14.0	1.137	.	.	.	.	
5	98	B	0.062	0.125	2.50	20.0	0.051	.	.	.	.	
5	99	F	0.000	0.125	0.56	4.5	0.018	.	.	.	.	
5	100	C	0.062	0.125	0.37	3.0	.	.	X	.	.	
5	101	M	0.062	0.187	0.81	4.3	0.025	.	.	.	.	
5	102	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
5	103	F	0.000	0.125	1.25	10.0	0.040	.	.	.	.	
5	104	F	0.000	0.062	1.56	25.0	0.012	.	.	.	.	
5	105	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
5	106	C	0.062	0.312	2.81	9.0	0.143	.	.	.	.	
5	107	M	0.062	0.125	0.62	5.0	0.013	.	.	.	.	
5	108	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
5	109	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
5	110	M	0.062	0.125	0.50	4.0	0.010	.	.	.	.	
5	111	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
5	112	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
5	113	M	0.062	0.125	0.62	5.0	.	.	X	.	.	
5	114	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
			Total Mass (Picogram)=				3.040	0.030				
			Total Count			=	90.	1.	20.	2.	1.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-42 TABLE PREPARATION DATE: 26-MAY-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	59.	172012.	1344.4	0.07 ± 0.01	0.87 ± 0.75	13.60 ±11.99
	Amphibole	1.	2915.	87.2	0.12 ± 0.00	0.81 ± 0.00	6.50 ± 0.00
	Other	5.	14577.		0.06 ± 0.00	0.40 ± 0.16	6.40 ± 2.51
	All Fiber	65.	189504.		0.07 ± 0.02	0.83 ± 0.72	12.94 ±11.62
Bundle	Chrysotile	11.	32070.	4841.2	0.27 ± 0.16	1.80 ± 1.82	7.23 ± 5.43
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	3.	8746.		0.19 ± 0.06	1.27 ± 0.50	7.61 ± 4.04
	All Bundle	14.	40816.		0.25 ± 0.15	1.69 ± 1.62	7.32 ± 5.02
Cluster	Chrysotile	6.	17493.	1434.2	0.33 ± 0.19	1.35 ± 0.85	4.47 ± 2.42
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	6.	17493.		0.22 ± 0.11	0.59 ± 0.21	3.07 ± 1.21
	All Cluster	12.	34985.		0.28 ± 0.16	0.97 ± 0.71	3.77 ± 1.96
Matrix	Chrysotile	14.	40816.	1241.8	0.19 ± 0.15	1.22 ± 1.26	11.58 ±20.66
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	9.	26239.		0.12 ± 0.07	0.52 ± 0.18	5.20 ± 2.57
	All Matrix	23.	67055.		0.16 ± 0.12	0.95 ± 1.04	9.09 ±16.27

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/9A
Individual Grid Openings = 0.000069 Sq Cm
Number of Grid Openings = 5
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-44

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	0.37	6.0	.	.	.	X	.	
2	2	C	0.062	0.375	1.38	3.7	0.084	.	.	.	.	
3	3	F	0.000	0.125	1.13	9.0	.	0.041	.	.	.	
4	4	F	0.000	0.062	2.63	42.0	0.021	.	.	.	.	
4	5	M	0.062	0.187	0.75	4.0	.	.	X	.	.	
5	6	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
5	7	F	0.000	0.062	0.75	12.0	.	.	.	X	.	
6	8	F	0.000	0.062	0.81	13.0	.	.	.	X	.	
6	9	B	0.062	0.312	0.75	2.4	.	0.044	.	.	.	
7	10	F	0.000	0.125	2.94	23.5	.	0.108	.	.	.	
8	11	F	0.000	0.062	0.44	7.0	.	.	.	X	.	
8	12	F	0.000	0.062	12.94	207.0	0.103	.	.	.	.	
8	13	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
8	14	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
			Total Mass (Picogram)=				0.229	0.193				
			Total Count			=	6.	3.	1.	4.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-44 TABLE PREPARATION DATE: 26-MAY-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	5.	6624.	192.2	0.06 ± 0.00	3.64 ± 5.26	58.20 ±84.22
	Amphibole	2.	2650.	198.1	0.12 ± 0.00	2.03 ± 1.28	16.25 ±10.25
	Other	4.	5299.		0.06 ± 0.00	0.59 ± 0.22	9.50 ± 3.51
	All Fiber	11.	14573.		0.07 ± 0.03	2.24 ± 3.65	32.86 ±58.70
Bundle	Chrysotile	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Amphibole	1.	1325.	58.2	0.31 ± 0.00	0.75 ± 0.00	2.40 ± 0.00
	Other	0.	0.		0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	All Bundle	1.	1325.		0.31 ± 0.00	0.75 ± 0.00	2.40 ± 0.00
Cluster	Chrysotile	1.	1325.	111.0	0.37 ± 0.00	1.38 ± 0.00	3.67 ± 0.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	0.	0.		0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	All Cluster	1.	1325.		0.37 ± 0.00	1.38 ± 0.00	3.67 ± 0.00
Matrix	Chrysotile	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	1.	1325.		0.19 ± 0.00	0.75 ± 0.00	4.00 ± 0.00
	All Matrix	1.	1325.		0.19 ± 0.00	0.75 ± 0.00	4.00 ± 0.00

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/B-6
Individual Grid Opening = 0.000075 Sq Cm
Number of Grid Openings = 10
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-46

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	B	0.062	0.312	1.56	5.0	0.079	.	.	.	.	
1	2	F	0.000	0.187	2.56	13.7	.	0.212	.	.	.	
1	3	F	0.000	0.125	1.38	11.0	.	0.051	.	.	.	
1	4	F	0.000	0.062	0.75	12.0	0.006	.	.	.	X	
1	5	F	0.000	0.062	0.56	9.0	.	.	.	.	.	
3	6	M	0.062	0.125	0.69	5.5	0.014	.	.	.	.	
3	7	F	0.000	0.125	1.13	9.0	0.036	.	.	.	.	
4	8	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
5	9	F	0.000	0.062	4.00	64.0	0.032	.	.	.	.	
6	10	M	0.062	0.062	0.50	8.0	0.005	.	.	.	.	
6	11	F	0.000	0.187	0.62	3.3	.	0.052	.	.	.	
6	12	F	0.000	0.125	0.81	6.5	0.026	.	.	.	.	
7	13	M	0.062	0.062	0.37	6.0	0.004	.	.	.	.	
7	14	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
8	15	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
9	16	F	0.000	0.062	0.56	9.0	.	.	.	X	.	
9	17	F	0.000	0.062	0.56	9.0	.	.	.	X	.	
10	18	B	0.125	0.375	3.12	8.3	0.381	.	.	.	.	
10	19	F	0.000	0.062	1.06	17.0	.	.	.	X	.	
10	20	M	0.062	0.187	0.94	5.0	0.029	.	.	.	.	
10	21	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
			Total Mass (Picogram)=				0.628	0.315				
			Total Count			=	14.	3.	0.	3.	1.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-46 TABLE PREPARATION DATE: 26-MAY-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	8.	11315.	165.0	0.08 ± 0.03	1.10 ± 1.19	15.69 ±19.66
	Amphibole	3.	4243.	445.0	0.17 ± 0.04	1.52 ± 0.98	9.33 ± 5.36
	Other	4.	5658.		0.06 ± 0.00	0.69 ± 0.25	11.00 ± 4.00
	All Fiber	15.	21216.		0.09 ± 0.05	1.08 ± 0.97	13.17 ±14.45
Bundle	Chrysotile	2.	2829.	650.9	0.34 ± 0.04	2.34 ± 1.10	6.67 ± 2.36
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	0.	0.		0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	All Bundle	2.	2829.		0.34 ± 0.04	2.34 ± 1.10	6.67 ± 2.36
Matrix	Chrysotile	4.	5658.	72.7	0.11 ± 0.06	0.62 ± 0.24	6.13 ± 1.31
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	0.	0.		0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	All Matrix	4.	5658.		0.11 ± 0.06	0.62 ± 0.24	6.13 ± 1.31

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/B-8
Individual Grid Openings = 0.000071 Sq Cm
Number of Grid Openings = 10
Film Magnification = 20000

FIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-021 152-B-169

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.125	0.69	5.5	0.022	.	.	.	.	
1	2	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
3	3	C	0.062	0.375	0.37	1.0	.	.	X	.	.	
3	4	M	0.312	0.062	0.62	10.0	0.032	.	.	.	.	
4	5	F	0.000	0.187	1.06	5.7	.	.	.	.	X	
7	6	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
7	7	F	0.000	0.125	0.62	5.0	.	0.023	.	.	.	
8	8	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
9	9	F	0.000	0.062	0.37	6.0	.	.	.	.	X	
9	10	F	0.000	0.062	2.38	38.0	0.019	.	.	.	.	
			Total Mass (Picogram)=				0.089	0.023				
			Total Count			=	6.	1.	1.	0.	2.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-021 TABLE PREPARATION DATE: 31-AUG-82

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	5.	8607.	97.8	0.08 ± 0.03	1.01 ± 0.76	15.10 ±13.04
	Amphibole	1.	1721.	39.4	0.12 ± 0.00	0.62 ± 0.00	5.00 ± 0.00
	Other	2.	3443.		0.12 ± 0.09	0.72 ± 0.49	5.83 ± 0.24
	All Fiber	8.	13772.		0.09 ± 0.05	0.89 ± 0.63	11.52 ±11.03
Cluster	Chrysotile	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	1.	1721.		0.37 ± 0.00	0.37 ± 0.00	1.00 ± 0.00
	All Cluster	1.	1721.		0.37 ± 0.00	0.37 ± 0.00	1.00 ± 0.00
Matrix	Chrysotile	1.	1721.	54.6	0.06 ± 0.00	0.62 ± 0.00	10.00 ± 0.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	0.	0.		0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	All Matrix	1.	1721.		0.06 ± 0.00	0.62 ± 0.00	10.00 ± 0.00

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/B-2
Individual Grid Opening = 0.000058 Sq Cm
Number of Grid Openings = 10
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-025 158-B-184

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
7	1	F	0.000	0.125	0.75	6.0	.	0.028	.	.	.	
			Total Mass (Picogram)=				0.000	0.028				
			Total Count			=	0.	1.	0.	0.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-025 TABLE PREPARATION DATE: 31-AUG-82

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Amphibole	1.	1562.	43.1	0.12 ± 0.00	0.75 ± 0.00	6.00 ± 0.00
	Other	0.	0.		0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	All Fiber	1.	1562.		0.12 ± 0.00	0.75 ± 0.00	6.00 ± 0.00

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/C-1
Individual Grid Opening = 0.000064 Sq Cm
Number of Grid Openings = 10
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-026 158-K-185

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.125	0.69	5.5	.	.	.	X	.	
1	2	F	0.000	0.062	0.37	6.0	.	.	.	X	.	
4	3	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
5	4	F	0.000	0.187	1.87	10.0	.	.	.	X	.	
6	5	F	0.000	0.062	0.81	13.0	.	.	.	X	.	
6	6	F	0.000	0.062	0.56	9.0	.	0.005	.	.	.	NA(8) MG(8) SI(50) FE(35)
6	7	F	0.000	0.062	0.44	7.0	.	.	.	X	.	
8	8	F	0.000	0.062	0.44	7.0	.	0.004	.	.	.	NA(15) MG(8) SI(68) FE(
8	9	F	0.000	0.125	1.25	10.0	.	.	.	X	.	
			Total Mass (Picogram)=				0.007	0.009				
			Total Count =				1.	2.	0.	6.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-026 TABLE PREPARATION DATE: 31-AUG-82

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	1.	1467.	10.2	0.06 ± 0.00	0.87 ± 0.00	14.00 ± 0.00
	Amphibole	2.	2934.	13.5	0.06 ± 0.00	0.50 ± 0.09	8.00 ± 1.41
	Other	6.	8803.		0.10 ± 0.05	0.91 ± 0.57	8.58 ± 2.91
	All Fiber	9.	13204.		0.09 ± 0.05	0.81 ± 0.48	9.06 ± 3.00

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/C 2
Individual Grid Opening = 0.000068 Sq Cm
Number of Grid Openings = 10
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 01-SEP-82

SAMPLE CODE: C06545-029 160-B-190

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambis	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.125	0.87	7.0	0.028	.	.	.	.	
2	2	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
3	3	C	0.062	0.125	1.25	10.0	0.025	.	.	.	.	
6	4	F	0.000	0.125	1.00	8.0	0.032	.	.	.	.	
7	5	F	0.000	0.062	0.94	15.0	.	.	.	.	X	
8	6	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
9	7	F	0.000	0.062	2.81	45.0	0.022	.	.	.	.	
9	8	F	0.000	0.312	1.87	6.0	.	0.431	.	.	.	
9	9	C	0.062	0.187	0.62	3.3	0.019	.	.	.	.	
			Total Mass (Picogram)=				0.136	0.431				
			Total Count			=	7.	1.	0.	0.	1.	

III RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-029 TABLE PREPARATION DATE: 01-SEP-82

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	5.	7584.	138.4	0.09 ± 0.03	1.16 ± 0.95	15.60 ±16.59
	Amphibole	1.	1517.	654.3	0.31 ± 0.00	1.87 ± 0.00	6.00 ± 0.00
	Other	1.	1517.		0.06 ± 0.00	0.94 ± 0.00	15.00 ± 0.00
	All Fiber	7.	10617.		0.12 ± 0.09	1.23 ± 0.83	14.14 ±14.02
Cluster	Chrysotile	2.	3034.	67.4	0.16 ± 0.04	0.94 ± 0.44	6.67 ± 4.71
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	0.	0.		0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	All Cluster	2.	3034.		0.16 ± 0.04	0.94 ± 0.44	6.67 ± 4.72

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/C-5
Individual Grid Opening = 0.000066 Sq Cm
Number of Grid Openings = 10
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-030 160-K-191

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	MG(93) SI(111
1	2	B	0.062	0.312	5.75	18.4	0.292	.	.	.	.	
2	3	B	0.062	0.375	1.25	3.3	0.076	.	.	.	.	
2	4	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
2	5	B	0.062	0.250	3.25	13.0	0.132	.	.	.	.	
2	6	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
2	7	C	0.062	0.375	0.50	1.3	0.030	.	.	.	.	
2	8	B	0.062	0.187	1.94	10.3	0.059	.	.	.	.	
2	9	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
3	10	B	0.062	0.625	4.69	7.5	0.476	.	.	.	.	
3	11	F	0.000	0.062	0.37	6.0	0.003	.	.	X	.	
3	12	F	0.000	0.062	0.62	10.0	.	.	.	.	.	
3	13	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
3	14	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
4	15	F	0.000	0.125	1.31	10.5	.	.	X	.	.	LOST
4	16	F	0.000	0.625	2.81	4.5	.	.	X	.	.	LOST
4	17	F	0.000	0.062	1.44	23.0	0.011	.	.	.	.	
4	18	F	0.000	0.187	4.06	21.7	0.292	.	.	.	.	
5	19	F	0.000	0.062	4.25	68.0	0.034	.	.	.	.	
5	20	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
7	21	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
7	22	C	0.062	0.625	3.12	5.0	0.317	.	.	.	.	NA(6) MG(4)
7	23	F	0.000	0.062	0.69	11.0	.	0.006	.	.	.	SI(34) FE(2E
10	24	F	0.000	0.062	1.38	22.0	0.011	.	.	.	.	
10	25	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
10	26	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
10	27	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
10	28	C	0.062	0.062	1.56	25.0	0.016	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 31-AUG-82

SAMPLE CODE: C06545-030

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Fstl	X-Ray
10	29	C	0.062	0.125	0.50	4.0	0.010	.	.	.	.	
10	30	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
10	31	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
10	32	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
10	33	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
10	34	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	
10	35	F	0.000	0.062	0.62	10.0	.	0.006	.	.	.	NA(12) MG(9) SI(87) FE(46)
			Total Mass (Picogram)=				1.855	0.012				
			Total Count =				30.	2.	2.	1.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-030 TABLE PREPARATION DATE: 31-AUG-82

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	21.	32812.	697.2	0.07 ± 0.03	1.12 ± 1.07	15.79 ± 13.45
	Amphibole	2.	3125.	18.9	0.06 ± 0.00	0.66 ± 0.04	10.50 ± 0.71
	Other	3.	4687.		0.27 ± 0.31	1.58 ± 1.12	8.33 ± 3.33
	All Fiber	26.	40625.		0.09 ± 0.11	1.13 ± 1.03	14.53 ± 12.33
Bundle	Chrysotile	5.	7812.	1617.7	0.35 ± 0.17	3.38 ± 1.87	10.51 ± 5.68
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	0.	0.		0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	All Bundle	5.	7812.		0.35 ± 0.17	3.38 ± 1.87	10.51 ± 5.68
Cluster	Chrysotile	4.	6250.	584.2	0.30 ± 0.26	1.42 ± 1.24	8.83 ± 10.89
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	0.	0.		0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	All Cluster	4.	6250.		0.30 ± 0.26	1.42 ± 1.24	8.83 ± 10.89

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/B-1
Individual Grid Opening = 0.000064 Sq Cm
Number of Grid Openings = 10
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 01-SEP-82

SAMPLE CODE: C06545-032 162-B-196

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.125	1.06	8.5	0.034	.	.	.	.	
2	2	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
2	3	M	1.875	0.062	0.69	11.0	0.209	.	.	.	.	
3	4	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
3	5	F	0.000	0.062	0.44	7.0	.	.	X	.	.	
4	6	F	0.000	0.125	1.25	10.0	.	0.046	.	.	.	
8	7	F	0.000	0.062	0.94	15.0	.	.	.	.	X	
9	8	F	0.000	0.062	0.37	6.0	.	.	X	.	.	
10	9	M	0.937	0.062	0.37	6.0	0.057	.	.	.	.	
10	10	B	0.062	0.125	1.25	10.0	0.025	.	.	.	.	
			Total Mass (Picogram)=				0.335	0.046				
			Total Count =				6.	1.	2.	0.	1.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-032 TABLE PREPARATION DATE: 01-SEP-82

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	3.	4478.	64.7	0.08 ± 0.04	0.75 ± 0.39	9.17 ± 4.53
	Amphibole	1.	1493.	68.7	0.12 ± 0.00	1.25 ± 0.00	10.00 ± 0.00
	Other	3.	4478.		0.06 ± 0.00	0.58 ± 0.31	9.33 ± 4.93
	All Fiber	7.	10449.		0.08 ± 0.03	0.75 ± 0.37	9.36 ± 3.88
Bundle	Chrysotile	1.	1493.	37.9	0.12 ± 0.00	1.25 ± 0.00	10.00 ± 0.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	0.	0.		0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	All Bundle	1.	1493.		0.12 ± 0.00	1.25 ± 0.00	10.00 ± 0.00
Matrix	Chrysotile	2.	2986.	398.0	0.06 ± 0.00	0.53 ± 0.22	8.50 ± 3.54
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	0.	0.		0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	All Matrix	2.	2986.		0.06 ± 0.00	0.53 ± 0.22	8.50 ± 3.54

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/D-3
Individual Grid Opening = 0.000067 Sq Cm
Number of Grid Openings = 10
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-61 290

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	2	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
3	3	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
4	4	F	0.000	0.062	0.31	5.0	.	.	X	.	.	
5	5	F	0.000	0.062	0.31	5.0	.	.	.	X	.	
6	6	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
7	7	F	0.000	0.062	4.37	70.0	.	0.040	.	.	.	
9	8	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
9	9	F	0.000	0.062	0.25	4.0	.	.	.	X	.	
9	10	F	0.000	0.125	0.50	4.0	.	0.018	.	.	.	
9	11	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
10	12	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
			Total Mass (Picogram)=				0.032	0.059				
			Total Count			=	7.	2.	1.	2.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA :
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-61 TABLE PREPARATION DATE: 25-JUN-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	7.	9689.	44.9	0.06 ± 0.00	0.58 ± 0.10	9.29 ± 1.60
	Amphibole	2.	2768.	81.2	0.09 ± 0.04	2.44 ± 2.74	37.00 ±46.67
	Other	3.	4152.		0.06 ± 0.00	0.29 ± 0.04	4.67 ± 0.58
	All Fiber	12.	16609.		0.07 ± 0.02	0.82 ± 1.13	12.75 ±18.22

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/E-10
Individual Grid Opening = 0.000072 Sq Cm
Number of Grid Openings = 10
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 21-JUL-83

SAMPLE CODE: C06545-68 310

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	0.50	8.0	.	0.005	.	.	.	
1	2	F	0.000	0.062	0.62	10.0	.	.	.	X	.	
2	3	F	0.000	0.062	0.50	8.0	.	.	X	.	.	
2	4	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
4	5	C	0.062	0.625	1.25	2.0	.	.	X	.	.	
4	6	F	0.000	0.062	0.94	15.0	.	0.009	.	.	.	
4	7	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
4	8	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
4	9	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
5	10	C	0.062	0.500	0.62	1.2	.	.	X	.	.	
5	11	F	0.000	0.062	0.62	10.0	.	.	.	X	.	
7	12	F	0.000	0.125	1.19	9.5	.	.	X	.	.	
8	13	F	0.000	0.062	0.50	8.0	.	.	X	.	.	
8	14	F	0.000	0.062	0.62	10.0	.	.	X	.	.	
9	15	F	0.000	0.062	0.69	11.0	.	0.006	.	.	.	
10	16	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
			Total Mass (Picogram)=				0.026	0.020				
			Total Count			=	5.	3.	6.	2.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-6B TABLE PREPARATION DATE: 21-JUL-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	5.	7232.	37.5	0.06 ± 0.00	0.65 ± 0.20	10.40 ± 3.21
	Amphibole	3.	4339.	28.3	0.06 ± 0.00	0.71 ± 0.22	11.33 ± 3.51
	Other	6.	8678.		0.07 ± 0.03	0.68 ± 0.26	9.25 ± 0.99
	All Fiber	14.	20249.		0.07 ± 0.02	0.67 ± 0.21	10.11 ± 2.48
Cluster	Chrysotile	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	2.	2893.		0.56 ± 0.09	0.94 ± 0.44	1.63 ± 0.53
	All Cluster	2.	2893.		0.56 ± 0.09	0.94 ± 0.44	1.63 ± 0.53

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 060883/B-3
Individual Grid Opening = 0.000069 Sq Cm
Number of Grid Openings = 10
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 21-JUL-83

SAMPLE CODE: C06545-076 3f6

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Asbis	Not Asbe	No Patt	X-Ray
2	1	F	0.000	0.062	0.50	8.0	.	.	.	X	.	
3	2	F	0.000	0.062	0.44	7.0	.	0.004	.	.	.	
3	3	F	0.000	0.062	0.94	15.0	.	0.009	.	.	.	
3	4	F	0.000	0.062	0.44	7.0	.	.	.	X	.	
6	5	F	0.000	0.062	0.62	10.0	.	0.006	.	.	.	
8	6	F	0.000	0.062	0.62	10.0	.	0.006	.	.	.	
10	7	F	0.000	0.062	0.37	6.0	.	.	.	X	.	
			Total Mass (Picogram)=				0.000	0.024				
			Total Count			=	0.	4.	0.	3.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-076 TABLE PREPARATION DATE: 21-JUL-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Amphibole	4.	6250.	37.7	0.06 ± 0.00	0.66 ± 0.21	10.50 ± 3.32
	Other	3.	4687.		0.06 ± 0.00	0.44 ± 0.06	7.00 ± 1.00
	All Fiber	7.	10937.		0.06 ± 0.00	0.56 ± 0.19	9.00 ± 3.06

Sample Collection and Preparation Data

Air Volume	=	1.00 Cu M
Deposit Area	=	1.00 Sq Cm
Ashed Area	=	1.00 Sq Cm
Redeposit Area	=	1.00 Sq Cm

Grid Data

Grid ID: 060883/D-2

Individual Grid Openings	=	0.000064 Sq Cm
Number of Grid Openings	=	10
Film Magnification	=	20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA :
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 21-JUL-83 :

SAMPLE CODE: C06545-85 378

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No : Patt	X-Ray
8	1	F	0.000	0.062	0.44	7.0	.	.	.	X	.	
			Total Mass (Picogram)=				0.000	0.000				
			Total Count			=	0.	0.	0.	1.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA

SINGLE SAMPLE SUMMARY TABLES

SAMPLE CODE: C06545-85 TABLE PREPARATION DATE: 21-JUL-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	1.	1493.		0.06 ± 0.00	0.44 ± 0.00	7.00 ± 0.00
	All Fiber	1.	1493.		0.06 ± 0.00	0.44 ± 0.00	7.00 ± 0.00

Sample Collection and Preparation Data

Air Volume	=	1.00 Cu M
Deposit Area	=	1.00 Sq Cm
Ashed Area	=	1.00 Sq Cm
Redeposit Area	=	1.00 Sq Cm

Grid Data

Grid ID: 060883		
Individual Grid Opening	=	0.000067 Sq Cm
Number of Grid Openings	=	10
Film Magnification	=	20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 21-JUL-83

SAMPLE CODE: C06545-73 330

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
1	2	F	0.000	0.125	1.13	9.0	.	0.041	.	.	.	
1	3	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	4	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	5	M	0.125	0.625	1.25	2.0	.	.	X	.	.	
1	6	C	0.062	0.125	1.25	10.0	0.025	.	.	.	.	
1	7	F	0.000	0.125	1.56	12.5	0.050	.	.	.	.	
1	8	B	0.062	0.187	1.25	6.7	0.038	.	.	.	.	
1	9	F	0.000	0.062	0.94	15.0	.	0.009	.	.	.	
2	10	M	0.062	0.187	0.62	3.3	.	.	X	.	.	
2	11	C	0.062	0.250	1.38	5.5	.	.	X	.	.	
3	12	F	0.000	0.125	0.87	7.0	0.028	.	.	.	.	
3	13	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
3	14	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
3	15	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
3	16	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
3	17	F	0.000	0.125	0.50	4.0	0.016	.	.	.	.	
3	18	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
3	19	F	0.000	0.062	0.44	7.0	.	.	X	.	.	
3	20	F	0.000	0.062	1.50	24.0	0.012	.	.	.	.	
3	21	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
3	22	F	0.000	0.062	0.62	10.0	.	.	X	.	.	
3	23	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
3	24	C	0.062	0.375	0.94	2.5	.	.	X	.	.	
4	25	F	0.000	0.062	0.94	15.0	.	.	X	.	.	
4	26	F	0.000	0.062	0.37	6.0	.	.	X	.	.	
4	27	F	0.000	0.062	0.62	10.0	.	.	.	X	.	
5	28	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
5	29	F	0.000	0.062	0.62	10.0	.	.	.	X	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 21-JUL-83

SAMPLE CODE: C06545-73

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
5	30	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
5	31	B	0.125	0.250	5.62	22.5	0.457	.	.	.	.	
5	32	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
5	33	F	0.000	0.125	1.06	8.5	.	0.039	.	.	.	
6	34	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
6	35	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
6	36	F	0.000	0.062	1.06	17.0	.	.	.	X	.	
7	37	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
8	38	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	
8	39	C	0.062	0.250	0.56	2.3	0.023	.	.	.	.	
8	40	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
8	41	B	0.062	0.187	3.44	18.3	0.105	.	.	.	.	
8	42	C	0.062	0.312	0.75	2.4	.	.	X	.	.	
9	43	F	0.000	0.062	0.44	7.0	.	0.004	.	.	.	
10	44	F	0.000	0.062	2.56	41.0	0.020	.	.	.	.	
10	45	F	0.000	0.062	2.81	45.0	0.022	.	.	.	.	
10	46	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
10	47	B	0.062	0.187	0.81	4.3	.	.	X	.	.	
10	48	B	0.062	0.125	0.87	7.0	.	.	X	.	.	
			Total Mass (Picogram)=				0.889	0.093				
			Total Count			=	30.	4.	11.	3.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA.
SINGLE SAMPLE SUMMARY TABLES.
SAMPLE CODE: C06545-73 TABLE PREPARATION DATE: 21-JUL-83.

Aerosol Object Count And Calculated Object Mass Characteristics.

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	25.	35765.	344.5	0.07 ± 0.02	0.86 ± 0.70	12.74 ±11.16
	Amphibole	4.	5722.	133.3	0.09 ± 0.04	0.89 ± 0.31	9.88 ± 3.52
	Other	7.	10014.		0.06 ± 0.00	0.67 ± 0.25	10.71 ± 3.99
	All Fiber	36.	51502.		0.07 ± 0.02	0.82 ± 0.60	12.03 ± 9.51
Bundle	Chrysotile	3.	4292.	858.2	0.21 ± 0.04	3.44 ± 2.19	15.83 ± 8.21
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	2.	2861.		0.16 ± 0.04	0.84 ± 0.04	5.67 ± 1.89
	All Bundle	5.	7153.		0.19 ± 0.04	2.40 ± 2.10	11.77 ± 8.10
Cluster	Chrysotile	2.	2861.	69.0	0.19 ± 0.09	0.91 ± 0.49	6.13 ± 5.48
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	3.	4292.		0.31 ± 0.06	1.02 ± 0.32	3.47 ± 1.76
	All Cluster	5.	7153.		0.26 ± 0.09	0.98 ± 0.34	4.53 ± 3.34
Matrix	Chrysotile	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	2.	2861.		0.41 ± 0.31	0.94 ± 0.44	2.67 ± 0.94
	All Matrix	2.	2861.		0.41 ± 0.31	0.94 ± 0.44	2.67 ± 0.94

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 060883/C-4
Individual Grid Openings = 0.000070 Sq Cm
Number of Grid Openings = 10
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 21-JUL-83

SAMPLE CODE: C06545-074 339

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	C	0.062	0.250	0.56	2.3	.	.	X	.	.	
1	2	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	3	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	4	M	0.062	0.062	0.81	13.0	0.008	.	.	.	.	
1	5	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
1	6	M	0.062	0.062	0.50	8.0	0.005	.	.	.	.	
1	7	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	
1	8	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	9	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
1	10	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	11	F	0.000	0.062	0.69	11.0	.	.	.	X	.	
1	12	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	13	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	14	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	15	F	0.000	0.062	0.62	10.0	.	0.006	.	.	.	
2	16	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
2	17	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
2	18	F	0.000	0.062	0.50	8.0	.	.	X	.	.	
2	19	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
2	20	F	0.000	0.062	1.13	18.0	.	.	X	.	.	
2	21	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
2	22	C	0.062	0.125	0.62	5.0	.	.	X	.	.	
2	23	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
2	24	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	25	M	0.062	0.062	1.13	18.0	0.011	.	.	.	.	
2	26	F	0.000	0.062	3.12	50.0	0.025	.	.	.	.	
2	27	F	0.000	0.062	2.19	35.0	0.017	.	.	.	.	
2	28	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
2	29	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 21-JUL-83

SAMPLE CODE: C06545-074

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
2	30	F	0.000	0.125	1.69	13.5	.	.	X	.	.	
2	31	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
2	32	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
2	33	F	0.000	0.062	0.37	6.0	.	.	X	.	.	
2	34	F	0.000	0.062	1.06	17.0	0.008	.	.	.	.	
3	35	C	0.125	0.250	1.69	6.8	0.137	.	.	.	.	
3	36	M	0.062	0.062	0.75	12.0	0.008	.	.	.	.	
4	37	C	0.062	0.312	1.25	4.0	.	.	X	.	.	
4	38	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
4	39	F	0.000	0.062	0.62	10.0	.	.	X	.	.	
4	40	F	0.000	0.062	1.44	23.0	0.011	.	.	.	.	
4	41	F	0.000	0.125	0.69	5.5	0.022	.	.	.	.	
4	42	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
5	43	C	0.062	0.187	0.62	3.3	.	.	X	.	.	
5	44	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
5	45	C	0.062	0.187	0.62	3.3	0.019	.	.	.	.	
5	46	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
5	47	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
5	48	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
5	49	M	0.062	0.062	1.25	20.0	0.013	.	.	.	.	
5	50	M	0.062	0.062	0.94	15.0	0.010	.	.	.	.	
5	51	C	0.062	0.625	1.25	2.0	.	.	X	.	.	
5	52	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
5	53	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
5	54	F	0.000	0.062	0.37	6.0	.	0.003	.	.	.	
5	55	M	0.062	0.062	0.81	13.0	0.008	.	.	.	.	
5	56	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
5	57	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
5	58	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 21-JUL-83

SAMPLE CODE: C06545-074

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
5	59	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
5	60	C	0.062	0.625	1.25	2.0	0.127	.	.	.	.	
5	61	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
5	62	F	0.000	0.062	1.13	18.0	.	.	X	.	.	
5	63	C	0.062	0.625	0.62	1.0	0.063	.	.	.	.	
5	64	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
5	65	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
5	66	F	0.000	0.062	1.81	29.0	0.014	.	.	.	.	
5	67	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
5	68	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
6	69	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
6	70	F	0.000	0.062	0.56	9.0	.	0.005	.	.	.	
6	71	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
6	72	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
6	73	M	0.125	0.250	2.00	8.0	0.162	.	.	.	.	
7	74	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
7	75	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
7	76	B	0.062	0.187	1.25	6.7	0.038	.	.	.	.	
7	77	B	0.062	0.250	1.87	7.5	0.076	.	.	.	.	
7	78	B	0.062	0.187	1.38	7.3	.	.	X	.	.	
7	79	C	0.062	0.187	0.62	3.3	0.019	.	.	.	.	
7	80	M	0.062	0.062	0.62	10.0	.	.	.	.	X	
7	81	M	0.062	0.062	1.31	21.0	0.013	.	.	.	.	
7	82	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
7	83	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
7	84	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
7	85	M	0.062	0.062	0.50	8.0	.	.	X	.	.	
7	86	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
7	87	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 21-JUL-83

SAMPLE CODE: C06545-074

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
8	88	F	0.000	0.062	0.56	9.0	.	.	X	.	.	
8	89	C	0.062	0.312	0.44	1.4	.	.	X	.	.	
8	90	C	0.062	0.312	0.75	2.4	.	.	X	.	.	
8	91	C	0.062	0.312	0.62	2.0	.	.		.	.	
8	92	F	0.000	0.062	1.06	17.0	0.008	.	.	.	.	
8	93	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
8	94	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
8	95	F	0.000	0.062	0.37	6.0	.	.	X	.	.	
8	96	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
8	97	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
8	98	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
8	99	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
8	100	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
8	101	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
8	102	B	0.062	0.375	5.62	15.0	0.343	.	.	.	.	
8	103	F	0.000	0.125	1.31	10.5	0.042	.	.	.	.	
			Total Mass (Picogram)=				1.482	0.014				
			Total Count			=	80.	3.	18.	1.	1.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA :
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-074 TABLE PREPARATION DATE: 21-JUL-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	60.	114504.	766.8	0.06 ± 0.01	0.74 ± 0.49	11.57 ± 7.81
	Amphibole	3.	5725.	27.4	0.06 ± 0.00	0.52 ± 0.13	8.33 ± 2.08
	Other	9.	17176.		0.07 ± 0.02	0.78 ± 0.44	11.06 ± 4.59
	All Fiber	72.	137405.		0.07 ± 0.01	0.74 ± 0.47	11.37 ± 7.32
Bundle	Chrysotile	3.	5725.	872.2	0.27 ± 0.10	2.92 ± 2.37	9.72 ± 4.59
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	1.	1908.		0.19 ± 0.00	1.38 ± 0.00	7.33 ± 0.00
	All Bundle	4.	7634.		0.25 ± 0.09	2.53 ± 2.08	9.13 ± 3.93
Cluster	Chrysotile	5.	9542.	697.8	0.37 ± 0.23	0.96 ± 0.49	3.28 ± 2.17
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	8.	15267.		0.30 ± 0.15	0.77 ± 0.31	2.80 ± 1.21
	All Cluster	13.	24809.		0.33 ± 0.18	0.84 ± 0.38	2.98 ± 1.58
Matrix	Chrysotile	12.	22901.	491.8	0.08 ± 0.05	0.95 ± 0.42	13.17 ± 4.47
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	2.	3817.		0.06 ± 0.00	0.56 ± 0.09	9.00 ± 1.41
	All Matrix	14.	26718.		0.08 ± 0.05	0.89 ± 0.41	12.57 ± 4.40

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 060883/C-5
Individual Grid Openings = 0.000065 Sq Cm
Number of Grid Openings = 8
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 21-JUL-83

SAMPLE CODE: C06545-081

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
3	1	F	0.000	0.062	2.50	40.0	0.020	.	.	.	.	
3	2	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
3	3	F	0.000	0.125	0.56	4.5	0.018	.	.	.	.	
4	4	F	0.000	0.062	0.44	7.0	.	.	.	.	X	
4	5	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
5	6	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
5	7	F	0.000	0.062	1.94	31.0	0.015	.	.	.	.	
5	8	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
5	9	C	0.062	0.187	0.56	3.0	.	.	X	.	.	
5	10	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
5	11	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
5	12	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
6	13	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
6	14	F	0.000	0.062	0.62	10.0	.	0.006	.	.	.	
6	15	M	0.062	0.062	0.50	8.0	0.005	.	.	.	.	
8	16	F	0.000	0.062	1.06	17.0	0.008	.	.	.	.	
8	17	F	0.000	0.125	0.44	3.5	.	0.016	.	.	.	
8	18	C	0.062	0.375	0.62	1.7	.	.	X	.	.	
8	19	C	0.062	0.437	0.62	1.4	.	.	X	.	.	
10	20	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
			Total Mass (Picogram)=				0.103	0.022				
			Total Count			=	14.	2.	3.	0.	1.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA :
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-081 TABLE PREPARATION DATE:: 21-JUL-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	13.	20312.	153.5	0.07 ± 0.02	0.82 ± 0.67	12.73 ±10.93
	Amphibole	2.	3125.	34.2	0.09 ± 0.04	0.53 ± 0.13	6.75 ± 4.60
	Other	1.	1562.		0.06 ± 0.00	0.44 ± 0.00	7.00 ± 0.00
	All Fiber	16.	25000.		0.07 ± 0.02	0.76 ± 0.61	11.63 ±10.13
Cluster	Chrysotile	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	3.	4687.		0.33 ± 0.13	0.60 ± 0.04	2.03 ± 0.85
	All Cluster	3.	4687.		0.33 ± 0.13	0.60 ± 0.04	2.03 ± 0.85
Matrix	Chrysotile	1.	1562.	7.9	0.06 ± 0.00	0.50 ± 0.00	8.00 ± 0.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	0.	0.		0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	All Matrix	1.	1562.		0.06 ± 0.00	0.50 ± 0.00	8.00 ± 0.00

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data :

Grid ID: 060883/E-2
Individual Grid Openings = 0.000064 Sq Cm
Number of Grid Openings = 10
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 21-JUL-83

SAMPLE CODE: C06545-075 342

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	B	0.062	0.250	4.37	17.5	0.178	.	.	.	.	
1	2	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
1	3	C	0.062	0.562	0.62	1.1	0.057	.	.	.	.	
1	4	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	5	C	0.062	0.625	1.25	2.0	0.127	.	.	.	.	
1	6	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	7	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	8	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	9	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
2	10	B	0.125	0.250	0.94	3.7	0.076	.	.	.	.	
2	11	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
2	12	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
2	13	M	0.062	0.062	1.25	20.0	0.013	.	.	.	.	
2	14	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	
2	15	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
2	16	M	0.125	0.312	1.31	4.2	0.133	.	.	.	.	
2	17	M	0.062	0.062	0.50	8.0	0.005	.	.	.	.	
2	18	F	0.000	0.062	0.25	4.0	.	.	X	.	.	
2	19	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	20	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
2	21	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
2	22	M	0.187	1.250	3.75	3.0	2.285	.	.	.	.	
2	23	M	0.062	0.062	1.44	23.0	0.015	.	.	.	.	
2	24	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
2	25	C	0.125	1.250	3.12	2.5	1.270	.	.	.	.	
3	26	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
3	27	M	0.062	0.125	0.62	5.0	0.013	.	.	.	.	
3	28	C	0.125	0.250	1.13	4.5	0.091	.	.	.	.	
3	29	M	0.062	0.312	0.62	2.0	.	.	X	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 21-JUL-83

SAMPLE CODE: C06545-075

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
3	30	M	0.062	0.062	0.69	11.0	0.007	.	.	.	.	
3	31	F	0.000	0.062	0.81	13.0	.	.	X	.	.	
3	32	M	0.062	0.062	0.37	6.0	0.004	.	.	.	.	
3	33	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
4	34	C	0.062	0.125	0.62	5.0	.	.	X	.	.	
4	35	B	0.062	0.187	4.06	21.7	0.124	.	.	.	.	
4	36	F	0.000	0.062	1.06	17.0	0.008	.	.	.	.	
4	37	F	0.000	0.187	1.19	6.3	.	0.098	.	.	.	
4	38	C	0.062	0.375	0.75	2.0	.	.	X	.	.	
4	39	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
4	40	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
4	41	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
4	42	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
5	43	C	0.125	1.875	2.50	1.3	.	.	X	.	.	
5	44	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
5	45	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
5	46	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
5	47	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
5	48	M	0.062	0.375	0.94	2.5	0.057	.	.	.	.	
5	49	B	0.125	0.625	4.13	6.6	0.838	.	.	.	.	
5	50	F	0.000	0.062	1.75	28.0	0.014	.	.	.	.	
5	51	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
5	52	F	0.000	0.062	0.75	12.0	.	.	X	.	.	
5	53	F	0.000	0.062	0.50	8.0	.	.	X	.	.	
5	54	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
5	55	F	0.000	0.125	1.06	8.5	0.034	.	.	.	.	
5	56	B	0.062	0.187	1.75	9.3	0.053	.	.	.	.	
5	57	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
5	58	F	0.000	0.062	0.94	15.0	.	.	X	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 21-JUL-83

SAMPLE CODE: C06545-075

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
5	59	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
5	60	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
6	61	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
6	62	M	0.062	0.125	0.62	5.0	0.013	.	.	.	.	
6	63	F	0.000	0.062	0.25	4.0	.	.	X	.	.	
6	64	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
6	65	C	0.062	0.312	0.81	2.6	.	.	X	.	.	
6	66	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
6	67	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
6	68	F	0.000	0.062	0.31	5.0	.	0.003	.	.	.	
6	69	B	0.125	0.312	1.25	4.0	.	.	X	.	.	
6	70	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
6	71	F	0.000	0.125	1.25	10.0	0.040	.	.	.	.	
6	72	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
6	73	M	0.062	0.062	0.69	11.0	0.007	.	.	.	.	
6	74	F	0.000	0.062	2.50	40.0	0.020	.	.	.	.	
6	75	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
6	76	F	0.000	0.062	0.94	15.0	.	.	X	.	.	
6	77	F	0.000	0.125	0.69	5.5	0.022	.	.	.	.	
6	78	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
6	79	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
6	80	F	0.000	0.062	0.50	8.0	.	.	X	.	.	
6	81	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
6	82	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
6	83	F	0.000	0.125	1.69	13.5	0.054	.	.	.	.	
6	84	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
6	85	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
6	86	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
6	87	M	0.062	0.062	0.56	9.0	0.006	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 21-JUL-83

SAMPLE CODE: C06545-075

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
6	88	F	0.000	0.062	1.44	23.0	0.011	.	.	.	.	
6	89	C	0.062	0.625	3.12	5.0	.	.	X	.	.	
6	90	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
7	91	F	0.000	0.062	3.75	60.0	0.030	.	.	.	.	
7	92	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
7	93	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
7	94	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
7	95	F	0.000	0.062	2.13	34.0	0.017	.	.	.	.	
7	96	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
7	97	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
7	98	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
8	99	F	0.000	0.062	0.62	10.0	.	.	X	.	.	
8	100	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
8	101	F	0.000	0.250	0.87	3.5	0.112	.	.	.	.	
8	102	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
8	103	C	0.062	0.312	0.62	2.0	.	.	X	.	.	
8	104	M	0.062	0.312	0.62	2.0	0.032	.	.	.	.	
8	105	C	0.062	0.125	0.69	5.5	.	.	X	.	.	
8	106	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
8	107	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
8	108	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
8	109	C	0.062	0.187	1.19	6.3	.	.	X	.	.	
8	110	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
			Total Mass (Picogram)=				6.064	0.101				
			Total Count			=	89.	2.	19.	0.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-075 TABLE PREPARATION DATE: 21-JUL-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	64.	120373.	1207.7	0.07 ± 0.03	0.83 ± 0.58	12.58 ± 9.20
	Amphibole	2.	3762.	190.4	0.12 ± 0.09	0.75 ± 0.62	5.67 ± 0.94
	Other	9.	16927.		0.06 ± 0.00	0.62 ± 0.26	9.89 ± 4.23
	All Fiber	75.	141062.		0.07 ± 0.03	0.81 ± 0.55	12.07 ± 8.71
Bundle	Chrysotile	5.	9404.	2386.6	0.30 ± 0.18	3.05 ± 1.59	11.77 ± 7.55
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	1.	1881.		0.31 ± 0.00	1.25 ± 0.00	4.00 ± 0.00
	All Bundle	6.	11285.		0.30 ± 0.16	2.75 ± 1.60	10.47 ± 7.46
Cluster	Chrysotile	4.	7523.	2905.9	0.67 ± 0.42	1.53 ± 1.10	2.53 ± 1.43
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	8.	15047.		0.49 ± 0.58	1.29 ± 0.97	3.72 ± 1.93
	All Cluster	12.	22570.		0.55 ± 0.52	1.37 ± 0.97	3.32 ± 1.81
Matrix	Chrysotile	16.	30093.	4904.5	0.20 ± 0.30	0.95 ± 0.81	8.73 ± 5.88
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	1.	1881.		0.31 ± 0.00	0.62 ± 0.00	2.00 ± 0.00
	All Matrix	17.	31974.		0.20 ± 0.29	0.93 ± 0.78	8.34 ± 5.93

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 060883/D-1
Individual Grid Opening = 0.000066 Sq Cm
Number of Grid Openings = 8
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 21-JUL-83

SAMPLE CODE: C06545-077 350

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
1	2	F	0.000	0.062	0.25	4.0	.	.	.	.	X	
2	3	F	0.000	0.062	0.50	8.0	.	.	X	.	.	
3	4	M	0.062	0.125	1.56	12.5	.	.	X	.	.	
3	5	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
3	6	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
3	7	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
3	8	M	0.062	0.062	1.06	17.0	0.011	.	.	.	.	
3	9	C	0.062	0.250	1.38	5.5	.	.	X	.	.	
4	10	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
4	11	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
4	12	C	0.187	4.375	8.12	1.9	17.329	.	.	.	.	
4	13	F	0.000	0.062	0.50	8.0	.	.	.	.	X	
4	14	C	0.062	0.375	0.75	2.0	.	.	X	.	.	
4	15	M	0.062	0.062	0.56	9.0	.	.	X	.	.	
5	16	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
5	17	F	0.000	0.125	1.06	8.5	.	.	.	X	.	
5	18	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
5	19	B	0.062	0.250	1.56	6.2	0.063	.	.	.	.	
5	20	M	0.062	0.437	0.75	1.7	.	.	X	.	.	
5	21	M	0.062	0.125	0.62	5.0	.	.	X	.	.	
5	22	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
5	23	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
5	24	C	0.062	0.437	0.56	1.3	.	.	X	.	.	
5	25	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
6	26	F	0.000	0.062	0.62	10.0	.	0.006	.	.	.	
7	27	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
7	28	F	0.000	0.062	3.69	59.0	0.029	.	.	.	.	
7	29	F	0.000	0.125	0.81	6.5	.	0.030	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 21-JUL-83

SAMPLE CODE: C06545-077

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
7	30	F	0.000	0.062	0.44	7.0	.	0.004	.	.	.	
7	31	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
7	32	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
7	33	M	0.062	0.062	1.13	18.0	0.011	.	.	.	.	
7	34	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
8	35	M	0.062	0.062	0.62	10.0	.	.	X	.	.	
8	36	F	0.000	0.062	0.31	5.0	.	0.003	.	.	.	
8	37	F	0.000	0.125	0.44	3.5	.	0.016	.	.	.	
8	38	C	0.125	1.250	1.25	1.0	.	.	X	.	.	
9	39	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
9	40	F	0.000	0.062	0.44	7.0	.	.	X	.	.	
9	41	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
9	42	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
10	43	C	0.062	0.250	1.87	7.5	0.076	.	.	.	.	
10	44	C	0.062	0.500	0.62	1.2	0.051	.	.	.	.	
10	45	F	0.000	0.062	0.94	15.0	.	0.009	.	.	.	
			Total Mass (Picogram)=				17.658	0.067				
			Total Count			=	25.	6.	11.	1.	2.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-077 TABLE PREPARATION DATE: 21-JUL-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	19.	29687.	182.3	0.06 ± 0.00	0.77 ± 0.74	12.32 ±11.89
	Amphibole	6.	9375.	105.2	0.08 ± 0.03	0.59 ± 0.24	7.83 ± 4.13
	Other	5.	7812.		0.08 ± 0.03	0.55 ± 0.30	7.10 ± 1.82
	All Fiber	30.	46875.		0.07 ± 0.02	0.70 ± 0.61	10.55 ± 9.84
Bundle	Chrysotile	1.	1562.	99.2	0.25 ± 0.00	1.56 ± 0.00	6.25 ± 0.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	0.	0.		0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	All Bundle	1.	1562.		0.25 ± 0.00	1.56 ± 0.00	6.25 ± 0.00
Cluster	Chrysotile	3.	4687.	27275.1	1.71 ± 2.31	3.54 ± 4.02	3.54 ± 3.45
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	4.	6250.		0.58 ± 0.45	0.98 ± 0.39	2.45 ± 2.08
	All Cluster	7.	10937.		1.06 ± 1.50	2.08 ± 2.71	2.91 ± 2.54
Matrix	Chrysotile	2.	3125.	34.7	0.06 ± 0.00	1.09 ± 0.04	17.50 ± 0.71
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	5.	7812.		0.16 ± 0.16	0.82 ± 0.42	7.64 ± 4.28
	All Matrix	7.	10937.		0.13 ± 0.14	0.90 ± 0.37	10.46 ± 5.95

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 060883/D-3
Individual Grid Openings = 0.000064 Sq Cm
Number of Grid Openings = 10
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA .
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 21-JUL-83

SAMPLE CODE: C06545-078 354

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	0.62	10.0	.	0.006	.	.	.	
1	2	F	0.000	0.125	0.81	6.5	.	0.030	.	.	.	
2	3	F	0.000	0.062	0.75	12.0	.	.	X	.	.	
2	4	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
2	5	C	0.125	0.250	2.50	10.0	.	.	X	.	.	
2	6	F	0.000	0.062	0.25	4.0	.	.	.	X	.	
3	7	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
3	8	F	0.000	0.062	0.25	4.0	.	.	X	.	.	
4	9	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
4	10	M	0.125	0.375	1.87	5.0	0.229	.	.	.	.	
9	11	F	0.000	0.062	1.31	21.0	0.010	.	.	.	.	
9	12	B	0.125	0.250	2.38	9.5	.	.	X	.	.	
9	13	F	0.000	0.062	1.06	17.0	.	0.010	.	.	.	
10	14	F	0.000	0.062	0.37	6.0	.	0.003	.	.	.	
10	15	F	0.000	0.187	0.75	4.0	.	0.062	.	.	.	
10	16	F	0.000	0.125	0.75	6.0	.	0.028	.	.	.	
10	17	F	0.000	0.062	0.56	9.0	.	0.005	.	.	.	
10	18	F	0.000	0.062	0.50	8.0	.	0.005	.	.	.	
			Total Mass (Picogram)=				0.255	0.148				
			Total Count			=	5.	8.	4.	1.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-078 TABLE PREPARATION DATE: 21-JUL-83.

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	4.	5877.	39.6	0.06 ± 0.00	0.84 ± 0.38	13.50 ± 6.14
	Amphibole	8.	11754.	218.0	0.09 ± 0.05	0.68 ± 0.21	8.31 ± 3.99
	Other	3.	4408.		0.06 ± 0.00	0.42 ± 0.29	6.67 ± 4.62
	All Fiber	15.	22039.		0.08 ± 0.04	0.67 ± 0.30	9.37 ± 5.11
Bundle	Chrysotile	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	1.	1469.		0.25 ± 0.00	2.38 ± 0.00	9.50 ± 0.00
	All Bundle	1.	1469.		0.25 ± 0.00	2.38 ± 0.00	9.50 ± 0.00
Cluster	Chrysotile	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	1.	1469.		0.25 ± 0.00	2.50 ± 0.00	10.00 ± 0.00
	All Cluster	1.	1469.		0.25 ± 0.00	2.50 ± 0.00	10.00 ± 0.00
Matrix	Chrysotile	1.	1469.	335.8	0.37 ± 0.00	1.87 ± 0.00	5.00 ± 0.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	0.	0.		0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	All Matrix	1.	1469.		0.37 ± 0.00	1.87 ± 0.00	5.00 ± 0.00

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 060883/D-4
Individual Grid Opening = 0.000068 Sq Cm
Number of Grid Openings = 10
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 21-JUL-83

SAMPLE CODE: C06545-079 356

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	C	0.062	0.562	1.25	2.2	.	.	X	.	.	
1	2	C	0.062	0.312	0.69	2.2	0.035	.	.	.	.	
1	3	F	0.000	0.062	0.94	15.0	.	0.009	.	.	.	
2	4	C	0.062	0.625	0.62	1.0	.	.	X	.	.	
2	5	F	0.000	0.062	0.62	10.0	.	0.006	.	.	.	
2	6	F	0.000	0.062	0.56	9.0	.	.	.	.	X	
3	7	F	0.000	0.062	0.62	10.0	.	.	X	.	.	
3	8	F	0.000	0.062	1.38	22.0	.	0.013	.	.	.	
3	9	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
3	10	C	0.062	0.500	1.13	2.3	0.091	.	.	.	.	
4	11	F	0.000	0.125	1.00	8.0	0.032	.	.	.	.	
6	12	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
7	13	F	0.000	0.062	0.81	13.0	.	0.007	.	.	.	
8	14	C	0.062	0.187	0.69	3.7	0.021	.	.	.	.	
9	15	B	0.062	0.250	1.87	7.5	0.076	.	.	.	.	
9	16	F	0.000	0.062	0.62	10.0	.	0.006	.	.	.	
9	17	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
10	18	F	0.000	0.062	0.31	5.0	.	0.003	.	.	.	
10	19	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
			Total Mass (Picogram)=				0.286	0.043				
			Total Count			=	9.	6.	3.	0.	1.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-079 TABLE PREPARATION DATE: 21-JUL-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	5.	7179.	90.2	0.08 ± 0.03	0.98 ± 0.53	14.00 ± 9.14
	Amphibole	6.	8615.	61.9	0.06 ± 0.00	0.78 ± 0.36	12.50 ± 5.75
	Other	2.	2872.		0.06 ± 0.00	0.59 ± 0.04	9.50 ± 0.71
	All Fiber	13.	18665.		0.07 ± 0.02	0.83 ± 0.41	12.62 ± 6.64
Bundle	Chrysotile	1.	1436.	109.4	0.25 ± 0.00	1.87 ± 0.00	7.50 ± 0.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	0.	0.		0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	All Bundle	1.	1436.		0.25 ± 0.00	1.87 ± 0.00	7.50 ± 0.00
Cluster	Chrysotile	3.	4307.	211.4	0.33 ± 0.16	0.83 ± 0.25	2.71 ± 0.83
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	2.	2872.		0.59 ± 0.04	0.94 ± 0.44	1.61 ± 0.86
	All Cluster	5.	7179.		0.44 ± 0.18	0.87 ± 0.29	2.27 ± 0.94

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 060883/D-5
Individual Grid Opening = 0.000070 Sq Cm
Number of Grid Openings = 10
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA:
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 21-JUL-83

SAMPLE CODE: C06545-080 362

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	C	0.125	0.375	0.94	2.5	.	.	X	.	.	
1	2	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	3	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	4	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	5	F	0.000	0.125	0.62	5.0	0.020	.	.	.	.	
1	6	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	7	M	0.062	0.062	0.37	6.0	0.004	.	.	.	.	
2	8	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
2	9	B	0.125	0.500	3.63	7.3	0.589	.	.	.	.	
2	10	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
2	11	F	0.000	0.125	2.94	23.5	0.094	.	.	.	.	
2	12	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
2	13	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
2	14	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
2	15	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
2	16	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	
2	17	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
2	18	F	0.000	0.062	1.75	28.0	.	0.016	.	.	.	
2	19	F	0.000	0.062	0.44	7.0	.	0.004	.	.	.	
3	20	F	0.000	0.062	0.87	14.0	.	0.008	.	.	.	
3	21	F	0.000	0.062	1.38	22.0	0.011	.	.	.	.	
3	22	F	0.000	0.062	1.44	23.0	0.011	.	.	.	.	
3	23	M	0.125	0.250	2.50	10.0	.	.	X	.	.	
3	24	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
3	25	F	0.000	0.062	0.62	10.0	.	.	.	.	X	
4	26	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
4	27	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
4	28	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
4	29	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 21-JUL-83

SAMPLE CODE: C06545-080

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
4	30	C	0.062	0.625	0.75	1.2	.	.	X	.	.	
4	31	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
4	32	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
4	33	C	0.062	0.937	2.19	2.3	0.333	.	.	.	.	
4	34	C	0.062	0.437	0.62	1.4	.	.	X	.	.	
4	35	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
4	36	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
4	37	B	0.125	0.312	10.63	34.0	1.079	.	.	.	.	
4	38	C	0.062	0.125	2.19	17.5	0.044	.	.	.	.	
4	39	F	0.000	0.062	1.69	27.0	0.013	.	.	.	.	
4	40	C	0.062	0.625	1.56	2.5	.	.	X	.	.	
4	41	F	0.000	0.062	0.75	12.0	.	.	X	.	.	
4	42	M	0.062	0.062	0.62	10.0	.	.	X	.	.	
4	43	F	0.000	0.062	1.63	26.0	0.013	.	.	.	.	
4	44	F	0.000	0.062	0.87	14.0	.	.	X	.	.	
4	45	C	0.062	0.250	0.62	2.5	.	.	.	.	X	
4	46	F	0.000	0.062	1.31	21.0	0.010	.	.	.	.	
4	47	C	0.062	0.625	0.75	1.2	.	.	X	.	.	
4	48	F	0.000	0.125	1.25	10.0	0.040	.	.	.	.	
4	49	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
4	50	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
4	51	F	0.000	0.062	1.81	29.0	0.014	.	.	.	.	
4	52	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
5	53	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
5	54	M	0.062	0.062	0.50	8.0	.	.	X	.	.	
5	55	F	0.000	0.062	3.56	57.0	0.028	.	.	.	.	
5	56	M	0.125	0.625	1.87	3.0	0.381	.	.	.	.	
5	57	M	0.062	0.125	1.94	15.5	0.039	.	.	.	.	
5	58	F	0.000	0.125	0.69	5.5	0.022	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 21-JUL-83

SAMPLE CODE: C06545-080

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
5	59	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
5	60	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	
5	61	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
6	62	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
6	63	F	0.000	0.062	0.50	8.0	.	0.005	.	.	.	
6	64	M	0.062	0.125	0.50	4.0	0.010	.	.	.	.	
6	65	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
7	66	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
7	67	F	0.000	0.062	1.50	24.0	0.012	.	.	.	.	
7	68	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
7	69	F	0.000	0.062	1.00	16.0	.	.	X	.	.	
7	70	F	0.000	0.062	1.06	17.0	0.008	.	.	.	.	
8	71	F	0.000	0.062	1.31	21.0	0.010	.	.	.	.	
9	72	F	0.000	0.062	0.81	13.0	.	0.007	.	.	.	
9	73	C	0.125	0.187	1.19	6.3	.	.	X	.	.	
9	74	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
9	75	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
9	76	C	0.125	0.625	1.56	2.5	.	.	X	.	.	
9	77	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
10	78	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
10	79	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
10	80	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
			Total Mass (Picogram)=				2.993	0.040				
			Total Count			=	60.	5.	13.	0.	2.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA .
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-080 TABLE PREPARATION DATE: 21-JUL-83.

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	51.	79687.	791.4	0.07 ± 0.02	0.92 ± 0.64	13.88 ± 9.28
	Amphibole	5.	7812.	62.9	0.06 ± 0.00	0.87 ± 0.52	14.00 ± 8.40
	Other	4.	6250.		0.06 ± 0.00	0.81 ± 0.16	13.00 ± 2.58
	All Fiber	60.	93750.		0.07 ± 0.02	0.91 ± 0.60	13.83 ± 8.84
Bundle	Chrysotile	2.	3125.	2606.5	0.41 ± 0.13	7.13 ± 4.95	20.63 ±18.92
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	0.	0.		0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	All Bundle	2.	3125.		0.41 ± 0.13	7.13 ± 4.95	20.63 ±18.92
Cluster	Chrysotile	2.	3125.	590.1	0.53 ± 0.57	2.19 ± 0.00	9.92 ±10.72
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	8.	12500.		0.47 ± 0.18	1.00 ± 0.39	2.52 ± 1.66
	All Cluster	10.	15625.		0.48 ± 0.25	1.24 ± 0.61	4.00 ± 4.96
Matrix	Chrysotile	5.	7812.	688.3	0.20 ± 0.24	1.06 ± 0.78	7.70 ± 5.12
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	3.	4687.		0.12 ± 0.11	1.21 ± 1.12	9.33 ± 1.15
	All Matrix	8.	12500.		0.17 ± 0.19	1.12 ± 0.84	8.31 ± 4.01

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 060883/E-1
Individual Grid Openings = 0.000064 Sq Cm
Number of Grid Openings = 10
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA :
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-55 258

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambis	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	1.25	20.0	.	.	X	.	.	
1	2	F	0.000	0.062	0.25	4.0	.	.	X	.	.	
1	3	F	0.000	0.062	1.38	22.0	0.011	.	.	.	.	
1	4	F	0.000	0.062	0.44	7.0	.	.	X	.	.	
1	5	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	6	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	7	B	0.062	0.125	3.50	28.0	0.071	.	.	.	.	
1	8	F	0.000	0.062	0.25	4.0	.	.	.	.	X	
1	9	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	10	B	0.062	0.125	5.62	45.0	0.114	.	.	.	.	
1	11	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	12	C	0.062	0.187	0.75	4.0	.	.	X	.	.	
1	13	B	0.187	0.250	3.88	15.5	0.472	.	.	.	.	
1	14	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	15	F	0.000	0.062	1.31	21.0	0.010	.	.	.	.	
1	16	C	0.062	0.375	3.44	9.2	0.209	.	.	.	.	
1	17	M	0.125	2.187	3.75	1.7	2.666	.	.	.	.	
1	18	B	0.062	0.250	3.75	15.0	0.152	.	.	.	.	
1	19	F	0.000	0.062	2.56	41.0	0.020	.	.	.	.	
1	20	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
1	21	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
1	22	C	0.062	0.125	0.37	3.0	0.008	.	.	.	.	
1	23	C	0.062	0.312	0.31	1.0	.	.	X	.	.	
1	24	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	25	M	0.062	0.312	0.62	2.0	.	.	X	.	.	
1	26	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	27	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	28	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	29	F	0.000	0.125	2.25	18.0	0.072	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-55

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	30	F	0.000	0.062	0.37	6.0	.	.	.	.	X	
1	31	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	32	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	33	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	34	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
1	35	F	0.000	0.187	1.06	5.7	.	.	X	.	.	
1	36	C	0.062	0.437	0.62	1.4	0.044	.	.	.	.	
1	37	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
2	38	F	0.000	0.125	1.19	9.5	0.038	.	.	.	.	
2	39	F	0.000	0.125	1.13	9.0	0.036	.	.	.	.	
2	40	B	0.062	0.187	4.06	21.7	0.124	.	.	.	.	
2	41	F	0.000	0.062	2.19	35.0	0.017	.	.	.	.	
2	42	C	0.062	1.250	1.87	1.5	0.381	.	.	.	.	
2	43	B	0.062	0.125	3.00	24.0	0.061	.	.	.	.	
2	44	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
2	45	M	0.062	0.062	0.75	12.0	0.008	.	.	.	.	
2	46	M	0.062	0.187	0.62	3.3	0.019	.	.	.	.	
2	47	F	0.000	0.062	0.56	9.0	.	.	X	.	.	
2	48	B	0.062	0.125	1.56	12.5	0.032	.	.	.	.	
3	49	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
3	50	F	0.000	0.062	0.37	6.0	.	.	.	.	X	
3	51	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
3	52	B	0.062	0.312	1.25	4.0	.	.	X	.	.	
3	53	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
3	54	B	0.125	0.625	1.25	2.0	.	.	X	.	.	
3	55	C	0.062	0.625	0.62	1.0	.	.	X	.	.	
3	56	F	0.000	0.062	1.56	25.0	.	.	X	.	.	
3	57	C	0.062	0.125	0.62	5.0	.	.	X	.	.	
4	58	C	0.062	0.625	0.94	1.5	.	.	X	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-55

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
4	59	B	0.062	0.187	2.00	10.7	0.061	.	.	.	.	
4	60	F	0.000	0.125	3.44	27.5	0.110	.	.	.	.	
4	61	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
4	62	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
4	63	F	0.000	0.062	1.31	21.0	0.010	.	.	.	.	
4	64	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
4	65	C	0.062	0.312	1.25	4.0	0.063	.	.	.	.	
4	66	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
4	67	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
4	68	B	0.062	0.125	5.31	42.5	0.108	.	.	.	.	
4	69	C	0.062	1.250	1.56	1.2	0.317	.	.	X	.	
4	70	F	0.000	0.062	0.31	5.0	.	.	.	.	.	
4	71	B	0.062	0.250	2.94	11.8	0.119	.	.	.	.	
4	72	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
5	73	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
5	74	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
6	75	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
6	76	B	0.062	0.250	0.94	3.7	0.038	.	.	.	.	
6	77	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
6	78	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
6	79	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
6	80	F	0.000	0.062	0.25	4.0	.	.	.	.	X	
6	81	F	0.000	0.062	6.38	102.0	0.051	.	.	.	.	
6	82	C	0.062	1.250	1.87	1.5	.	.	X	.	.	
6	83	C	0.062	0.187	0.81	4.3	.	.	X	.	.	
6	84	C	0.062	0.187	0.62	3.3	.	.	X	.	.	
6	85	F	0.000	0.062	2.19	35.0	0.017	.	.	.	.	
6	86	F	0.000	0.062	1.75	28.0	0.014	.	.	.	.	
6	87	F	0.000	0.062	1.50	24.0	0.012	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-55

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
6	88	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
6	89	F	0.000	0.062	1.50	24.0	0.012	.	.	.	.	
7	90	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
7	91	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
7	92	C	0.062	0.125	1.38	11.0	0.028	.	.	.	.	
7	93	C	0.062	0.375	0.62	1.7	.	.	X	.	.	
7	94	F	0.000	0.062	1.50	24.0	0.012	.	.	.	.	
7	95	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
7	96	B	0.062	0.187	1.25	6.7	.	.	X	.	.	
7	97	F	0.000	0.062	1.75	28.0	0.014	.	.	.	.	
7	98	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
7	99	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
7	100	F	0.000	0.062	2.00	32.0	0.016	.	.	.	.	
7	101	C	0.062	0.125	1.87	15.0	0.038	.	.	.	.	
7	102	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
7	103	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
7	104	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
7	105	F	0.000	0.062	2.75	44.0	0.022	.	.	.	.	
7	106	C	0.062	0.375	2.50	6.7	0.152	.	.	.	.	
7	107	C	0.062	0.750	1.25	1.7	0.152	.	.	.	.	
7	108	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
7	109	C	0.062	0.625	1.87	3.0	0.190	.	.	.	.	
7	110	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
7	111	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
7	112	F	0.000	0.062	1.50	24.0	0.012	.	.	.	.	
			Total Mass (Picogram)=				6.380	0.000				
			Total Count			=	88.	0.	19.	1.	4.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA

SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-55 TABLE PREPARATION DATE: 25-JUN-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	62.	127112.	1525.0	0.07 ± 0.02	1.12 ± 0.96	16.84 ±14.46
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	11.	22552.		0.07 ± 0.04	0.61 ± 0.46	8.70 ± 7.07
	All Fiber	73.	149664.		0.07 ± 0.02	1.04 ± 0.92	15.61 ±13.88
Bundle	Chrysotile	11.	22552.	2773.3	0.18 ± 0.06	3.32 ± 1.45	20.94 ±13.13
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	3.	6151.		0.37 ± 0.23	1.25 ± 0.00	4.22 ± 2.34
	All Bundle	14.	28703.		0.22 ± 0.13	2.88 ± 1.55	17.36 ±13.57
Cluster	Chrysotile	11.	22552.	3248.3	0.52 ± 0.41	1.64 ± 0.85	5.24 ± 4.63
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	9.	18452.		0.43 ± 0.36	0.80 ± 0.44	2.59 ± 1.57
	All Cluster	20.	41004.		0.48 ± 0.38	1.26 ± 0.80	4.05 ± 3.76
Matrix	Chrysotile	4.	8201.	5533.5	0.62 ± 1.04	1.44 ± 1.54	6.76 ± 5.01
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	1.	2050.		0.31 ± 0.00	0.62 ± 0.00	2.00 ± 0.00
	All Matrix	5.	10251.		0.56 ± 0.91	1.27 ± 1.38	5.81 ± 4.83

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/D-9
Individual Grid Opening = 0.000070 Sq Cm
Number of Grid Openings = 7
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-56 26 L

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	2	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
1	3	C	0.062	1.250	1.87	1.5	0.381	.	.	.	.	
1	4	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	5	F	0.000	0.062	0.31	5.0	.	.	.	X	.	
1	6	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	7	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	8	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	9	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	10	C	0.062	1.250	2.50	2.0	0.508	.	.	.	.	
1	11	F	0.000	0.062	4.69	75.0	0.037	.	.	.	.	
1	12	C	0.062	0.187	0.81	4.3	0.025	.	.	.	.	
1	13	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	14	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
1	15	F	0.000	0.062	0.25	4.0	.	0.002	.	.	.	
1	16	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	17	F	0.000	0.062	1.06	17.0	.	.	.	.	X	
1	18	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
1	19	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	20	M	0.062	0.062	0.81	13.0	0.008	.	.	.	.	
2	21	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	22	F	0.000	0.125	1.56	12.5	0.050	.	.	.	.	
2	23	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
2	24	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
2	25	F	0.000	0.062	1.44	23.0	0.011	.	.	.	.	
2	26	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
2	27	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	28	B	0.062	0.125	1.25	10.0	0.025	.	.	.	.	
2	29	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-56

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
2	30	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
2	31	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
2	32	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
2	33	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	
2	34	F	0.000	0.125	1.31	10.5	0.042	.	.	.	.	
2	35	C	0.062	0.187	0.94	5.0	0.029	.	.	.	.	
2	36	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
2	37	F	0.000	0.062	2.56	41.0	0.020	.	.	.	.	
2	38	B	0.125	0.437	1.69	3.9	.	.	X	.	.	
2	39	M	0.062	0.125	0.94	7.5	0.019	.	.	.	.	
2	40	C	0.125	0.625	1.56	2.5	0.317	.	.	.	.	
3	41	F	0.000	0.125	0.62	5.0	.	.	X	.	.	
3	42	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
4	43	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
4	44	F	0.000	0.062	0.44	7.0	.	0.004	.	.	.	
4	45	F	0.000	0.062	0.62	10.0	.	0.006	.	.	.	
4	46	F	0.000	0.062	1.63	26.0	0.013	.	.	.	.	
5	47	C	0.062	0.125	1.06	8.5	0.022	.	.	.	.	
5	48	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
5	49	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
5	50	C	0.062	0.625	0.62	1.0	.	.	X	.	.	
5	51	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
5	52	F	0.000	0.187	1.75	9.3	0.126	.	.	.	.	
5	53	B	0.062	0.125	0.75	6.0	.	.	X	.	.	
5	54	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
5	55	F	0.000	0.125	0.75	6.0	0.024	.	.	.	.	
5	56	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
5	57	C	0.062	0.250	0.50	2.0	.	.	X	.	.	
5	58	F	0.000	0.062	2.13	34.0	0.017	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-56

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
5	59	M	0.062	0.125	0.62	5.0	.	.	X	.	.	
6	60	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
6	61	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
6	62	F	0.000	0.062	1.81	29.0	0.014	.	.	.	.	
6	63	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
6	64	M	0.062	0.187	0.87	4.7	0.027	.	.	.	.	
6	65	C	0.062	0.625	1.25	2.0	.	.	X	.	.	
6	66	C	0.062	0.125	0.62	5.0	.	.	X	.	.	
6	67	M	0.062	0.187	0.62	3.3	0.019	.	.	.	.	
6	68	M	0.062	0.125	0.62	5.0	0.013	.	.	.	.	
6	69	F	0.000	0.062	0.25	4.0	.	.	X	.	.	
6	70	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
6	71	C	0.062	0.125	0.94	7.5	0.019	.	.	.	.	
6	72	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
6	73	C	0.062	0.312	1.25	4.0	.	.	X	.	.	
6	74	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
6	75	F	0.000	0.125	0.62	5.0	0.020	.	.	.	.	
6	76	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
6	77	C	0.062	0.250	1.56	6.2	0.063	.	.	.	.	
6	78	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
6	79	C	0.125	1.250	1.56	1.2	.	.	X	.	.	
7	80	B	0.062	0.250	2.38	9.5	0.096	.	.	.	.	
7	81	C	0.125	1.875	1.87	1.0	1.143	.	.	.	.	
7	82	C	0.125	1.875	2.50	1.3	1.523	.	.	.	.	
7	83	M	0.062	0.250	0.62	2.5	0.025	.	.	.	.	
7	84	C	0.062	0.375	0.94	2.5	.	.	X	.	.	
7	85	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
7	86	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
7	87	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-56

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
7	88	F	0.000	0.062	0.50	8.0	.	.	X	.	.	
7	89	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
7	90	M	0.062	0.062	0.75	12.0	0.008	.	.	.	.	
7	91	M	0.062	0.625	0.62	1.0	0.063	.	.	.	.	
7	92	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
7	93	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
7	94	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
7	95	F	0.000	0.062	2.31	37.0	0.018	.	.	.	.	
7	96	F	0.000	0.062	1.75	28.0	0.014	.	.	.	.	
7	97	F	0.000	0.062	1.06	17.0	0.008	.	.	.	.	
7	98	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
7	99	M	0.062	0.062	0.75	12.0	.	.	X	.	.	
7	100	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
7	101	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
7	102	F	0.000	0.062	1.06	17.0	0.008	.	.	.	.	
			Total Mass (Picogram)=				5.007	0.012				
			Total Count			=	83.	3.	14.	1.	1.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-56 TABLE PREPARATION DATE: 25-JUN-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	63.	127551.	1363.6	0.07 ± 0.02	0.92 ± 0.70	13.81 ±11.00
	Amphibole	3.	6074.	24.5	0.06 ± 0.00	0.44 ± 0.19	7.00 ± 3.00
	Other	5.	10123.		0.08 ± 0.03	0.55 ± 0.32	7.80 ± 5.36
	All Fiber	71.	143748.		0.07 ± 0.02	0.87 ± 0.67	13.10 ±10.63
Bundle	Chrysotile	2.	4049.	246.8	0.19 ± 0.09	1.81 ± 0.80	9.75 ± 0.35
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	2.	4049.		0.28 ± 0.22	1.22 ± 0.66	4.93 ± 1.52
	All Bundle	4.	8098.		0.23 ± 0.15	1.52 ± 0.69	7.34 ± 2.93
Cluster	Chrysotile	10.	20246.	8158.2	0.77 ± 0.72	1.56 ± 0.63	3.99 ± 2.73
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	7.	14172.		0.51 ± 0.38	0.96 ± 0.40	2.54 ± 1.46
	All Cluster	17.	34419.		0.67 ± 0.60	1.32 ± 0.61	3.39 ± 2.36
Matrix	Chrysotile	8.	16197.	368.8	0.20 ± 0.18	0.73 ± 0.13	6.13 ± 4.38
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	2.	4049.		0.09 ± 0.04	0.69 ± 0.09	8.50 ± 4.95
	All Matrix	10.	20246.		0.18 ± 0.17	0.73 ± 0.12	6.60 ± 4.32

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/D-10
Individual Grid Opening = 0.000071 Sq Cm
Number of Grid Openings = 7
Film Magnification = 20000

III RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-57

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	2	F	0.000	0.062	0.44	7.0	.	.	.	X	.	
1	3	F	0.000	0.062	0.62	10.0	.	.	X	.	.	
1	4	C	0.062	0.250	2.00	8.0	0.081	.	.	.	.	
1	5	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	6	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	7	F	0.000	0.062	2.38	38.0	0.019	.	.	.	.	
1	8	F	0.000	0.062	1.56	25.0	0.012	.	.	.	.	
1	9	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	10	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	11	F	0.000	0.062	0.31	5.0	.	.	.	X	.	
1	12	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	13	C	0.062	0.250	0.62	2.5	0.025	.	.	.	.	
1	14	C	0.062	0.375	0.75	2.0	0.046	.	.	.	.	
1	15	F	0.000	0.125	1.31	10.5	0.042	.	.	.	.	
1	16	F	0.000	0.062	3.19	51.0	0.025	.	.	.	.	
1	17	C	0.062	0.187	0.94	5.0	.	.	X	.	.	
1	18	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	19	F	0.000	0.062	2.25	36.0	0.018	.	.	.	.	
1	20	F	0.000	0.062	1.50	24.0	0.012	.	.	.	.	
1	21	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
1	22	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	23	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	24	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
1	25	F	0.000	0.062	1.06	17.0	0.008	.	.	.	.	
1	26	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	27	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
1	28	B	0.125	0.250	2.19	8.7	0.178	.	.	.	.	
1	29	C	0.062	0.187	1.19	6.3	0.036	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-57

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	30	C	0.062	0.375	0.62	1.7	0.038	.	.	.	.	
1	31	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	
1	32	C	0.062	0.312	0.87	2.8	0.044	.	.	.	.	
1	33	F	0.000	0.062	1.94	31.0	0.015	.	.	.	.	
1	34	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	35	F	0.000	0.062	1.56	25.0	0.012	.	.	.	.	
1	36	B	0.125	0.750	2.81	3.7	.	.	X	.	.	
1	37	F	0.000	0.062	2.81	45.0	0.022	.	.	.	.	
1	38	C	0.062	0.250	0.56	2.3	.	.	X	.	.	
1	39	F	0.000	0.062	1.63	26.0	0.013	.	.	.	.	
1	40	B	0.125	0.187	2.19	11.7	.	.	X	.	.	
1	41	B	0.125	0.312	2.38	7.6	.	.	X	.	.	
2	42	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
2	43	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
2	44	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
2	45	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	46	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
2	47	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
2	48	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
2	49	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
2	50	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	51	M	0.062	0.125	0.62	5.0	0.013	.	.	.	.	
2	52	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
2	53	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
2	54	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	55	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
2	56	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
2	57	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
2	58	B	0.062	0.125	1.56	12.5	0.032	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-57

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Asbis	Not Asbe	No Patt	X-Ray
2	59	F	0.000	0.062	2.75	44.0	0.022	.	.	.	.	
2	60	F	0.000	0.062	1.56	25.0	0.012	.	.	.	.	
2	61	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
2	62	F	0.000	0.062	0.56	9.0	.	.	.	X	.	
2	63	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
2	64	F	0.000	0.125	0.75	6.0	0.024	.	.	.	.	
2	65	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	
2	66	C	0.062	0.250	1.13	4.5	.	.	X	.	.	
3	67	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
3	68	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
3	69	F	0.000	0.062	3.25	52.0	0.026	.	.	.	.	
3	70	C	0.062	0.312	1.87	6.0	0.095	.	.	.	.	
3	71	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
3	72	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
3	73	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
3	74	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
3	75	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
3	76	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
3	77	F	0.000	0.062	0.25	4.0	.	.	X	.	.	
3	78	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
3	79	F	0.000	0.125	1.13	9.0	0.036	.	.	.	.	
3	80	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
3	81	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
3	82	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
3	83	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
3	84	F	0.000	0.062	2.75	44.0	0.022	.	.	.	.	
3	85	F	0.000	0.125	2.00	16.0	0.064	.	.	.	.	
3	86	C	0.062	0.312	1.75	5.6	0.089	.	.	.	.	
3	87	C	0.062	0.125	1.38	11.0	0.028	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-57

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
3	88	F	0.000	0.062	3.81	61.0	0.030	.	.	.	.	
3	89	F	0.000	0.062	1.31	21.0	0.010	.	.	.	.	
3	90	M	0.062	0.125	0.50	4.0	.	.	X	.	.	
3	91	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
3	92	M	0.062	0.062	0.62	10.0	.	.	X	.	.	
3	93	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	
3	94	F	0.000	0.062	2.81	45.0	0.022	.	.	.	.	
3	95	M	0.062	0.062	1.06	17.0	0.011	.	.	.	.	
3	96	F	0.000	0.062	0.37	6.0	.	.	.	X	.	
3	97	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
3	98	F	0.000	0.125	0.75	6.0	0.024	.	.	.	.	
3	99	C	0.062	0.187	1.56	8.3	0.048	.	.	.	.	
3	100	C	0.125	0.625	1.87	3.0	.	.	X	.	.	
3	101	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
3	102	F	0.000	0.125	0.81	6.5	0.026	.	.	.	.	
3	103	F	0.000	0.125	0.50	4.0	0.016	.	.	.	.	
3	104	B	0.062	0.125	0.44	3.5	.	.	X	.	.	
3	105	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
3	106	C	0.062	0.312	0.75	2.4	.	.	X	.	.	
3	107	C	0.062	0.187	1.87	10.0	0.057	.	.	.	.	
3	108	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
3	109	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
3	110	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
3	111	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
3	112	F	0.000	0.062	2.31	37.0	0.018	.	.	.	.	
3	113	F	0.000	0.062	3.56	57.0	0.028	.	.	.	.	
3	114	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
3	115	F	0.000	0.062	1.06	17.0	0.008	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-57

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
			Total Mass (Picogram)=				1.735	0.000				
			Total Count			=	98.	0.	13.	4.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA

SINGLE SAMPLE SUMMARY TABLES

SAMPLE CODE: C06545-57 TABLE PREPARATION DATE: 25-JUN-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	83.	380246.	4186.4	0.07 ± 0.02	1.12 ± 0.82	17.19 ±13.33
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	6.	27488.		0.06 ± 0.00	0.43 ± 0.14	6.83 ± 2.32
	All Fiber	89.	407733.		0.07 ± 0.02	1.07 ± 0.82	16.49 ±13.14
Bundle	Chrysotile	2.	9163.	959.7	0.19 ± 0.09	1.87 ± 0.44	10.63 ± 2.65
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	4.	18325.		0.34 ± 0.28	1.95 ± 1.04	6.63 ± 3.85
	All Bundle	6.	27488.		0.29 ± 0.24	1.93 ± 0.83	7.96 ± 3.81
Cluster	Chrysotile	11.	50394.	2692.8	0.26 ± 0.08	1.32 ± 0.53	5.84 ± 3.28
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	5.	22906.		0.32 ± 0.17	1.05 ± 0.51	3.43 ± 1.25
	All Cluster	16.	73300.		0.28 ± 0.12	1.23 ± 0.52	5.09 ± 2.99
Matrix	Chrysotile	2.	9163.	107.6	0.09 ± 0.04	0.84 ± 0.31	11.00 ± 8.49
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	2.	9163.		0.09 ± 0.04	0.56 ± 0.09	7.00 ± 4.24
	All Matrix	4.	18325.		0.09 ± 0.04	0.70 ± 0.25	9.00 ± 5.94

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/E-6
Individual Grid Opening = 0.000073 Sq Cm
Number of Grid Openings = 3
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-58 279

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
1	2	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
1	3	F	0.000	0.062	1.31	21.0	0.010	.	.	.	.	
1	4	B	0.187	0.375	3.00	8.0	.	.	X	.	.	
1	5	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
1	6	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	7	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	8	B	0.062	0.125	1.00	8.0	0.020	.	.	.	.	
1	9	F	0.000	0.125	1.00	8.0	0.032	.	.	.	.	
1	10	C	0.062	0.187	0.94	5.0	0.029	.	.	.	.	
1	11	F	0.000	0.062	1.38	22.0	0.011	.	.	.	.	
1	12	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	13	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	14	B	0.125	0.187	1.87	10.0	0.114	.	.	.	.	
1	15	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	16	F	0.000	0.062	1.50	24.0	0.012	.	.	.	.	
1	17	C	0.062	0.625	1.69	2.7	0.171	.	.	.	.	
1	18	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	19	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	20	C	0.125	1.250	1.87	1.5	.	.	X	.	.	
1	21	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	22	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
1	23	C	0.125	1.875	3.12	1.7	1.904	.	.	.	.	
1	24	F	0.000	0.062	1.06	17.0	0.008	.	.	.	.	
1	25	C	0.062	0.312	1.25	4.0	.	.	X	.	.	
1	26	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	27	B	0.062	0.187	0.62	3.3	0.019	.	.	.	.	
1	28	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	29	F	0.000	0.062	1.69	27.0	0.013	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-58

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	30	C	0.062	0.625	2.50	4.0	0.254	.	.	.	.	
1	31	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	32	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
1	33	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
2	34	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
2	35	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	36	F	0.000	0.125	1.87	15.0	0.060	.	.	.	.	
2	37	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
2	38	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	39	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
2	40	F	0.000	0.062	2.19	35.0	0.017	.	.	.	.	
2	41	M	0.062	0.125	0.62	5.0	0.013	.	.	.	.	
2	42	C	0.062	0.250	1.25	5.0	0.051	.	.	.	.	
2	43	C	0.062	0.312	1.25	4.0	0.063	.	.	.	.	
2	44	F	0.000	0.062	2.06	33.0	0.016	.	.	.	.	
2	45	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
2	46	B	0.187	0.625	7.50	12.0	2.285	.	.	.	.	
2	47	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	48	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	
2	49	F	0.000	0.062	0.56	9.0	.	.	X	.	.	
2	50	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
2	51	C	0.062	0.500	0.75	1.5	.	.	X	.	.	
2	52	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
2	53	C	0.062	0.625	0.94	1.5	.	.	X	.	.	
2	54	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
2	55	C	0.062	0.375	0.62	1.7	.	.	X	.	.	
2	56	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
2	57	C	0.062	0.187	0.62	3.3	0.019	.	.	.	.	
2	58	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-58

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
2	59	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	
2	60	F	0.000	0.062	0.69	11.0	.	.	X	.	.	
2	61	M	0.062	0.125	0.75	6.0	0.015	.	.	.	.	
2	62	C	0.062	0.500	1.25	2.5	0.102	.	.	.	.	
2	63	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
2	64	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
2	65	B	0.062	0.125	3.12	25.0	0.063	.	.	.	.	
3	66	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
3	67	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
3	68	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
3	69	F	0.000	0.062	1.31	21.0	0.010	.	.	.	.	
3	70	F	0.000	0.375	2.19	5.8	.	.	.	X	.	
3	71	C	0.062	0.937	2.81	3.0	0.428	.	.	.	.	
3	72	B	0.062	0.250	0.81	3.3	.	.	X	.	.	
3	73	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
3	74	F	0.000	0.062	2.19	35.0	0.017	.	.	.	.	
3	75	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
3	76	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
3	77	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
3	78	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
3	79	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
3	80	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	
3	81	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
3	82	F	0.000	0.062	0.56	9.0	.	.	X	.	.	
3	83	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
3	84	F	0.000	0.062	1.06	17.0	0.008	.	.	.	.	
3	85	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
3	86	F	0.000	0.062	1.69	27.0	0.013	.	.	.	.	
3	87	F	0.000	0.062	2.13	34.0	0.017	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-58

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
3	88	M	0.062	0.062	0.62	10.0	.	.	X	.	.	
3	89	F	0.000	0.062	0.25	4.0	.	.	X	.	.	
3	90	B	0.062	0.125	1.75	14.0	0.036	.	.	.	.	
3	91	F	0.000	0.062	1.44	23.0	0.011	.	.	.	.	
3	92	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
3	93	F	0.000	0.062	0.62	10.0	.	.	.	X	.	
3	94	F	0.000	0.062	2.00	32.0	0.016	.	.	.	.	
3	95	M	0.062	0.062	0.62	10.0	.	.	X	.	.	
3	96	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
3	97	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
3	98	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
3	99	C	0.062	0.312	0.81	2.6	.	.	X	.	.	
3	100	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
3	101	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
3	102	F	0.000	0.062	1.31	21.0	0.010	.	.	.	.	
			Total Mass (Picogram)=				6.186	0.000				
			Total Count =				86.	0.	14.	2.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-58 TABLE PREPARATION DATE: 25-JUN-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	69.	313651.	2721.7	0.06 ± 0.01	0.96 ± 0.51	15.07 ± 8.06
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	6.	27274.		0.11 ± 0.13	0.81 ± 0.69	8.14 ± 2.67
	All Fiber	75.	340925.		0.07 ± 0.04	0.95 ± 0.53	14.52 ± 7.99
Bundle	Chrysotile	6.	27274.	11535.9	0.23 ± 0.20	2.65 ± 2.53	12.06 ± 7.32
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	2.	9091.		0.31 ± 0.09	1.91 ± 1.55	5.62 ± 3.36
	All Bundle	8.	36365.		0.25 ± 0.17	2.46 ± 2.24	10.45 ± 6.98
Cluster	Chrysotile	9.	40911.	13734.6	0.61 ± 0.54	1.72 ± 0.88	3.47 ± 1.13
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	6.	27274.		0.56 ± 0.36	1.04 ± 0.46	2.13 ± 1.01
	All Cluster	15.	68185.		0.59 ± 0.46	1.45 ± 0.80	2.93 ± 1.25
Matrix	Chrysotile	2.	9091.	127.0	0.12 ± 0.00	0.69 ± 0.09	5.50 ± 0.71
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	2.	9091.		0.06 ± 0.00	0.62 ± 0.00	10.00 ± 0.00
	All Matrix	4.	18183.		0.09 ± 0.04	0.66 ± 0.06	7.75 ± 2.63

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/E-7
Individual Grid Openings = 0.000073 Sq Cm
Number of Grid Openings = 3
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-59 274

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	M	0.062	0.062	0.62	10.0	.	.	X	.	.	
3	2	F	0.000	0.062	0.94	15.0	.	0.009	.	.	.	
3	3	F	0.000	0.062	0.81	13.0	.	.	.	X	.	
3	4	F	0.000	0.062	3.06	49.0	0.024	.	.	.	.	
3	5	F	0.000	0.062	1.69	27.0	0.013	.	.	.	.	
3	6	F	0.000	0.062	1.56	25.0	0.012	.	.	.	.	
3	7	F	0.000	0.062	2.19	35.0	0.017	.	.	.	.	
3	8	F	0.000	0.062	1.75	28.0	0.014	.	.	.	.	
3	9	F	0.000	0.062	1.75	28.0	0.014	.	.	.	.	
3	10	F	0.000	0.062	1.06	17.0	0.008	.	.	.	.	
3	11	C	0.062	1.250	1.56	1.2	0.317	.	.	.	.	
3	12	M	0.187	0.312	1.25	4.0	0.190	.	.	.	.	
3	13	M	0.062	0.062	1.87	30.0	0.019	.	.	.	.	
3	14	F	0.000	0.062	0.56	9.0	.	.	.	X	.	
3	15	F	0.000	0.187	0.94	5.0	.	0.078	.	.	.	
4	16	F	0.000	0.125	1.25	10.0	.	0.046	.	.	.	
6	17	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
6	18	C	0.062	0.187	1.25	6.7	0.038	.	.	.	.	
6	19	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
6	20	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
6	21	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
6	22	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
6	23	C	0.062	0.187	0.75	4.0	0.023	.	.	.	.	
6	24	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
7	25	F	0.000	0.062	0.44	7.0	.	.	.	X	.	
9	26	F	0.000	0.062	0.37	6.0	.	.	.	X	.	
9	27	B	0.062	0.250	0.62	2.5	.	.	X	.	.	
9	28	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA :
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83.

SAMPLE CODE: C06545-59

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
Total Mass (Picogram)=							0.729	0.132				
Total Count =							19.	3.	2.	4.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-63

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
3	88	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
3	89	B	0.062	0.125	0.94	7.5	0.019	.	.	.	.	
3	90	B	0.062	0.187	11.88	63.3	0.362	.	.	.	.	
3	91	F	0.000	0.062	2.38	38.0	0.019	.	.	.	.	
3	92	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
4	93	F	0.000	0.125	1.13	9.0	0.036	.	.	.	.	
4	94	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
4	95	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
4	96	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
4	97	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
4	98	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
4	99	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
5	100	C	0.062	0.250	0.87	3.5	0.036	.	.	.	.	
5	101	C	0.062	0.375	0.94	2.5	0.057	.	.	.	.	
5	102	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
5	103	C	0.062	0.625	1.25	2.0	0.127	.	.	.	.	
5	104	C	0.062	0.312	0.62	2.0	.	.	X	.	.	
5	105	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
5	106	B	0.062	0.125	1.63	13.0	.	.	X	.	.	
5	107	F	0.000	0.062	2.50	40.0	0.020	.	.	.	.	
5	108	B	0.062	0.125	0.50	4.0	.	.	X	.	.	
5	109	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
5	110	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
5	111	B	0.062	0.250	1.25	5.0	0.051	.	.	.	.	
5	112	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	
5	113	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
5	114	F	0.000	0.062	0.94	15.0	.	.	.	X	.	
5	115	C	0.062	1.250	1.25	1.0	.	.	X	.	.	
5	116	F	0.000	0.250	2.38	9.5	.	.	.	X	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-63

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
5	117	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
5	118	F	0.000	0.062	1.75	28.0	0.014	.	.	.	.	
5	119	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
5	120	C	0.062	0.125	0.37	3.0	0.008	.	.	.	.	
5	121	C	0.062	0.125	0.50	4.0	0.010	.	.	.	.	
			Total Mass (Picogram)=				22.702	0.000				
			Total Count			=	95.	0.	16.	4.	6.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-63 TABLE PREPARATION DATE: 25-JUN-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	63.	173172.	1737.6	0.07 ± 0.02	0.95 ± 0.66	14.40 ± 9.63
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	12.	32985.		0.08 ± 0.05	0.86 ± 0.54	11.46 ± 3.99
	All Fiber	75.	206157.		0.07 ± 0.03	0.94 ± 0.64	13.93 ± 9.02
Bundle	Chrysotile	7.	19241.	17319.1	0.25 ± 0.17	6.76 ±10.22	21.17 ±23.48
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	4.	10995.		0.14 ± 0.03	0.95 ± 0.48	7.13 ± 4.25
	All Bundle	11.	30236.		0.21 ± 0.14	4.65 ± 8.44	16.06 ±19.66
Cluster	Chrysotile	17.	46729.	42915.6	0.77 ± 1.24	2.18 ± 3.50	3.43 ± 1.79
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	9.	24739.		0.56 ± 0.29	0.83 ± 0.26	1.64 ± 0.46
	All Cluster	26.	71468.		0.70 ± 1.01	1.71 ± 2.88	2.81 ± 1.70
Matrix	Chrysotile	8.	21990.	431.0	0.13 ± 0.07	0.87 ± 0.29	8.17 ± 4.34
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	1.	2749.		0.06 ± 0.00	0.75 ± 0.00	12.00 ± 0.00
	All Matrix	9.	24739.		0.12 ± 0.07	0.86 ± 0.27	8.59 ± 4.26

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 060883/A-2
Individual Grid Opening = 0.000073 Sq Cm
Number of Grid Openings = 5
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA .
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-63A

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
5	2	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
5	3	C	0.062	0.125	1.87	15.0	0.038	.	.	.	.	
5	4	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
5	5	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
5	6	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
5	7	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
			Total Mass (Picogram)=				0.066	0.000				
			Total Count =				7.	0.	0.	0.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA

SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-63A TABLE PREPARATION DATE: 25-JUN-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	6.	16493.	75.4	0.06 ± 0.00	0.57 ± 0.14	9.17 ± 2.23
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	0.	0.		0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	All Fiber	6.	16493.		0.06 ± 0.00	0.57 ± 0.14	9.17 ± 2.23
Cluster	Chrysotile	1.	2749.	104.7	0.12 ± 0.00	1.87 ± 0.00	15.00 ± 0.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	0.	0.		0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	All Cluster	1.	2749.		0.12 ± 0.00	1.87 ± 0.00	15.00 ± 0.00

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 060883/A-2
Individual Grid Openings = 0.000073 Sq Cm
Number of Grid Openings = 5
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA.
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 21-JUL-83

SAMPLE CODE: C06545-082

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.125	0.44	3.5	.	.	X	.	.	
2	2	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
2	3	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
3	4	F	0.000	0.062	0.31	5.0	.	.	X	.	.	
5	5	F	0.000	0.500	1.63	3.3	.	.	X	.	.	
5	6	F	0.000	0.062	0.44	7.0	.	.	.	X	.	
5	7	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
5	8	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
5	9	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
5	10	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
6	11	F	0.000	0.250	1.31	5.3	.	.	X	.	.	
6	12	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
7	13	F	0.000	0.062	0.50	8.0	.	.	.	.	X	
8	14	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
10	15	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
10	16	M	0.062	0.187	0.50	2.7	0.015	.	.	.	.	
			Total Mass (Picogram)=				0.064	0.000				
			Total Count =				10.	0.	4.	1.	1.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA :
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-082 TABLE PREPARATION DATE: 21-JUL-83 :

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	9.	13017.	69.9	0.06 ± 0.00	0.67 ± 0.27	10.78 ± 4.38
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	6.	8678.		0.18 ± 0.17	0.77 ± 0.55	5.33 ± 1.88
	All Fiber	15.	21695.		0.11 ± 0.12	0.71 ± 0.39	8.60 ± 4.46
Matrix	Chrysotile	1.	1446.	22.0	0.19 ± 0.00	0.50 ± 0.00	2.67 ± 0.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	0.	0.		0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	All Matrix	1.	1446.		0.19 ± 0.00	0.50 ± 0.00	2.67 ± 0.00

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 060883/E-4
Individual Grid Opening = 0.000069 Sq Cm
Number of Grid Openings = 10
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA :
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 21-JUL-83 :

SAMPLE CODE: C06545-083 370

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
3	2	F	0.000	0.062	1.75	28.0	0.014	.	.	.	.	
3	3	F	0.000	0.062	0.94	15.0	.	0.009	.	.	.	
5	4	F	0.000	0.062	0.69	11.0	.	.	.	X	.	
6	5	F	0.000	0.062	0.56	9.0	.	.	X	.	.	
6	6	F	0.000	0.062	0.44	7.0	.	.	.	.	.	
6	7	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
7	8	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
7	9	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
7	10	M	0.062	0.125	0.62	5.0	0.013	.	.	.	.	
7	11	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
7	12	C	0.062	0.250	1.25	5.0	.	.	X	.	.	
8	13	F	0.000	0.062	0.94	15.0	.	.	.	X	.	
9	14	F	0.000	0.125	1.25	10.0	.	0.046	.	.	.	
9	15	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
10	16	F	0.000	0.062	0.94	15.0	.	0.009	.	.	.	
			Total Mass (Picogram)=				0.058	0.063				
			Total Count =				8.	3.	3.	2.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-083 TABLE PREPARATION DATE: 21-JUL-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	7.	10568.	68.5	0.06 ± 0.00	0.81 ± 0.51	13.00 ± 8.08
	Amphibole	3.	4529.	95.5	0.08 ± 0.04	1.04 ± 0.18	13.33 ± 2.89
	Other	4.	6039.		0.06 ± 0.00	0.66 ± 0.21	10.50 ± 3.42
	All Fiber	14.	21135.		0.07 ± 0.02	0.82 ± 0.39	12.36 ± 5.97
Cluster	Chrysotile	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	1.	1510.		0.25 ± 0.00	1.25 ± 0.00	5.00 ± 0.00
	All Cluster	1.	1510.		0.25 ± 0.00	1.25 ± 0.00	5.00 ± 0.00
Matrix	Chrysotile	1.	1510.	19.2	0.12 ± 0.00	0.62 ± 0.00	5.00 ± 0.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	0.	0.		0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	All Matrix	1.	1510.		0.12 ± 0.00	0.62 ± 0.00	5.00 ± 0.00

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 060883/E-5
Individual Grid Openings = 0.000066 Sq Cm
Number of Grid Openings = 10
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 21-JUL-83

SAMPLE CODE: C06545-084 374

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) : Chrysotile	Amphibole	Ambig	Not Asbe	No : Patt	X-Ray
2	1	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
2	2	F	0.000	0.125	1.81	14.5	.	0.067	.	.	.	
3	3	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
3	4	F	0.000	0.062	0.31	5.0	.	.	.	X	.	
5	5	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
6	6	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
9	7	F	0.000	0.125	0.75	6.0	0.024	.	.	.	.	
9	8	F	0.000	0.062	0.44	7.0	.	0.004	.	.	.	
10	9	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
			Total Mass (Picogram)=				0.039	0.071				
			Total Count			=	6.	2.	0.	1.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-084 TABLE PREPARATION DATE: 21-JUL-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	6.	8749.	57.4	0.07 ± 0.03	0.45 ± 0.16	6.17 ± 1.17
	Amphibole	2.	2916.	103.2	0.09 ± 0.04	1.13 ± 0.97	10.75 ± 5.30
	Other	1.	1458.		0.06 ± 0.00	0.31 ± 0.00	5.00 ± 0.00
	All Fiber	9.	13123.		0.08 ± 0.03	0.58 ± 0.48	7.06 ± 2.98

290

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 060883
Individual Grid Opening = 0.000069 Sq Cm
Number of Grid Openings = 10
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 21-JUL-83

SAMPLE CODE: C06545-086 38

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	0.44	7.0	.	0.004	.	.	.	
3	2	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
4	3	F	0.000	0.125	2.00	16.0	0.064	.	.	.	.	
5	4	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
6	5	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
7	6	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
9	7	F	0.000	0.062	0.44	7.0	.	.	X	.	.	
10	8	F	0.000	0.062	0.31	5.0	.	.	X	.	.	
10	9	F	0.000	0.062	1.06	17.0	.	0.010	.	.	.	
10	10	F	0.000	0.062	0.31	5.0	.	.	X	.	.	
			Total Mass (Picogram)=				0.085	0.014				
			Total Count			=	5.	2.	3.	0.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA :
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-086 TABLE PREPARATION DATE: 21-JUL-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	5.	7572.	129.1	0.08 ± 0.03	0.94 ± 0.62	11.80 ± 3.70
	Amphibole	2.	3029.	20.9	0.06 ± 0.00	0.75 ± 0.44	12.00 ± 7.07
	Other	3.	4543.		0.06 ± 0.00	0.35 ± 0.07	5.67 ± 1.15
	All Fiber	10.	15145.		0.07 ± 0.02	0.73 ± 0.51	10.00 ± 4.57

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 060883/A-8
Individual Grid Opening = 0.000066 Sq Cm
Number of Grid Openings = 10
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 21-JUL-83

SAMPLE CODE: C06545-087 >86

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.125	0.50	4.0	.	.	.	X	.	
1	2	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
2	3	F	0.000	0.125	1.87	15.0	.	0.069	.	.	.	
3	4	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
4	5	F	0.000	0.125	0.62	5.0	0.020	.	.	.	.	
5	6	F	0.000	0.062	0.56	9.0	.	0.005	.	.	.	
6	7	F	0.000	0.062	0.56	9.0	.	.	.	.	X	
6	8	F	0.000	0.062	0.87	14.0	.	.	.	.	X	
6	9	F	0.000	0.250	1.50	6.0	.	0.221	.	.	.	
7	10	F	0.000	0.062	0.94	15.0	.	0.009	.	.	.	
7	11	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
7	12	F	0.000	0.125	0.69	5.5	0.022	.	.	.	.	
7	13	C	0.062	0.312	0.62	2.0	.	.	X	.	.	
7	14	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
7	15	F	0.000	0.062	1.50	24.0	0.012	.	.	.	.	
7	16	M	0.062	0.125	3.50	28.0	0.071	.	.	.	.	
7	17	M	0.062	0.125	0.75	6.0	0.015	.	.	.	.	
8	18	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
8	19	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
			Total Mass (Picogram)=				0.186	0.304				
			Total Count =				11.	4.	1.	1.	2.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-007 TABLE PREPARATION DATE: 21-JUL-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	9.	12876.	141.9	0.08 ± 0.03	0.94 ± 0.35	13.94 ± 7.00
	Amphibole	4.	5722.	434.5	0.12 ± 0.09	1.22 ± 0.58	11.25 ± 4.50
	Other	3.	4292.		0.08 ± 0.04	0.65 ± 0.20	9.00 ± 5.00
	All Fiber	16.	22890.		0.09 ± 0.05	0.96 ± 0.42	12.34 ± 6.13
Cluster	Chrysotile	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	1.	1431.		0.31 ± 0.00	0.62 ± 0.00	2.00 ± 0.00
	All Cluster	1.	1431.		0.31 ± 0.00	0.62 ± 0.00	2.00 ± 0.00
Matrix	Chrysotile	2.	2861.	123.5	0.12 ± 0.00	2.13 ± 1.94	17.00 ±15.56
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	0.	0.		0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	All Matrix	2.	2861.		0.12 ± 0.00	2.13 ± 1.94	17.00 ±15.56

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 060883/A-9
Individual Grid Opening = 0.000070 Sq Cm
Number of Grid Openings = 10
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 21-JUL-83

SAMPLE CODE: C06545-088 390

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Asbis	Not Asbe	No Patt	X-Ray
4	1	F	0.000	0.125	5.00	40.0	.	0.184	.	.	.	
4	2	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
4	3	F	0.000	0.125	0.81	6.5	.	0.030	.	.	.	
6	4	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
6	5	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
7	6	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
7	7	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
9	8	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
10	9	F	0.000	0.062	0.69	11.0	.	0.006	.	.	.	
			Total Mass (Picogram)=				0.019	0.220				
			Total Count =				6.	3.	0.	0.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA :
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-088 TABLE PREPARATION DATE: 21-JUL-83 :

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	6.	9446.	30.6	0.06 ± 0.00	0.41 ± 0.13	6.50 ± 2.07
	Amphibole	3.	4723.	346.8	0.10 ± 0.04	2.17 ± 2.45	19.17 ±18.18
	Other	0.	0.		0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	All Fiber	9.	14169.		0.08 ± 0.03	0.99 ± 1.51	10.72 ±11.20

Sample Collection and Preparation Data

Air Volume	=	1.00 Cu M
Deposit Area	=	1.00 Sq Cm
Ashed Area	=	1.00 Sq Cm
Redeposit Area	=	1.00 Sq Cm

Grid Data

Grid ID:		060883/A-10
Individual Grid Opening	=	0.000064 Sq Cm
Number of Grid Openings	=	10
Film Magnification	=	20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA :
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 21-JUL-83 :

SAMPLE CODE: C06545-089 394

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	0.44	7.0	.	0.004	.	.	.	
2	2	F	0.000	0.062	0.56	9.0	.	0.005	.	.	.	
4	3	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
8	4	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
10	5	F	0.000	0.062	1.13	18.0	.	0.010	.	.	.	
			Total Mass (Picogram)=				0.011	0.020				
			Total Count			=	2.	3.	0.	0.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA :
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-089 TABLE PREPARATION DATE: 21-JUL-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	2.	3078.	16.9	0.06 ± 0.00	0.69 ± 0.0?	11.00 ± 1.41
	Amphibole	3.	4618.	30.1	0.06 ± 0.00	0.71 ± 0.37	11.33 ± 5.86
	Other	0.	0.		0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	All Fiber	5.	7696.		0.06 ± 0.00	0.70 ± 0.26	11.20 ± 4.21

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 060883/B-6
Individual Grid Opening = 0.000065 Sq Cm
Number of Grid Openings = 10
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 21-JUL-83

SAMPLE CODE: C06545-090 395

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambis	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
6	2	F	0.000	0.062	3.75	60.0	0.030	.	.	.	.	
8	3	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
9	4	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
9	5	C	0.062	0.125	0.75	6.0	0.015	.	.	.	.	
			Total Mass (Picogram)=				0.058	0.000				
			Total Count			=	5.	0.	0.	0.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-090 TABLE PREPARATION DATE: 21-JUL-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	4.	6203.	66.5	0.06 ± 0.00	1.34 ± 1.64	21.50 ±26.20
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	0.	0.		0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	All Fiber	4.	6203.		0.06 ± 0.00	1.34 ± 1.64	21.50 ±26.20
Cluster	Chrysotile	1.	1551.	23.6	0.12 ± 0.00	0.75 ± 0.00	6.00 ± 0.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	0.	0.		0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	All Cluster	1.	1551.		0.12 ± 0.00	0.75 ± 0.00	6.00 ± 0.00

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 060883/B-7
Individual Grid Opening = 0.000064 Sq Cm
Number of Grid Openings = 10
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-MAY-83

SAMPLE CODE: C06545-33

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
4	30	F	0.000	0.062	2.31	37.0	0.018	.	.	.	.	
4	31	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
4	32	F	0.000	0.062	1.75	28.0	0.014	.	.	.	.	
4	33	F	0.000	0.062	1.13	18.0	.	0.010	.	.	.	
4	34	C	0.062	0.187	0.75	4.0	0.023	.	.	.	.	
4	35	B	0.062	0.187	1.87	10.0	.	.	X	.	.	
4	36	F	0.000	0.125	1.13	9.0	0.036	.	.	.	.	
5	37	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
5	38	B	0.062	0.250	3.81	15.3	0.155	.	.	.	.	
5	39	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
5	40	B	0.062	0.625	1.56	2.5	.	.	X	.	.	
5	41	C	0.062	1.875	3.75	2.0	1.143	.	.	.	.	
5	42	M	0.125	1.250	1.87	1.5	0.762	.	.	.	.	
6	43	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
6	44	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
6	45	C	0.062	0.250	0.75	3.0	.	.	X	.	.	
6	46	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
6	47	C	0.062	1.250	5.00	4.0	1.016	.	.	.	.	
6	48	M	0.062	0.062	1.25	20.0	0.013	.	.	.	.	
6	49	C	0.062	0.500	2.50	5.0	0.203	.	.	.	.	
6	50	M	0.062	0.125	1.25	10.0	0.025	.	.	.	.	
6	51	B	0.062	0.250	1.00	4.0	.	.	X	.	.	
6	52	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
6	53	M	0.062	0.062	1.25	20.0	0.013	.	.	.	.	
6	54	M	0.062	0.062	0.56	9.0	0.006	.	.	.	.	
6	55	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
6	56	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	
7	57	M	0.062	0.062	1.13	18.0	0.011	.	.	.	.	
7	58	M	0.062	0.062	0.31	5.0	.	.	X	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-MAY-83

SAMPLE CODE: C06545-33

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	
2	2	M	0.062	0.125	0.50	4.0	0.010	.	.	.	.	
2	3	F	0.000	0.125	0.62	5.0	.	0.023	.	.	.	
2	4	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
2	5	F	0.000	0.062	0.62	10.0	.	.	X	.	.	
2	6	C	0.062	0.312	0.94	3.0	0.048	.	.	.	.	
2	7	C	0.062	0.625	0.94	1.5	0.095	.	.	.	.	
2	8	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
2	9	C	0.062	1.250	1.25	1.0	.	.	X	.	.	
2	10	B	0.062	0.187	0.69	3.7	0.021	.	.	.	.	
2	11	C	0.062	0.937	1.56	1.7	0.238	.	.	.	.	
2	12	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	13	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
2	14	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
2	15	F	0.000	0.062	1.56	25.0	0.012	.	.	.	.	
2	16	F	0.000	0.062	2.25	36.0	0.018	.	.	.	.	
3	17	F	0.000	0.062	1.13	18.0	.	.	X	.	.	
3	18	F	0.000	0.062	1.38	22.0	0.011	.	.	.	.	
3	19	M	0.125	1.250	2.50	2.0	.	.	X	.	.	
3	20	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
3	21	M	0.062	0.062	1.69	27.0	0.017	.	.	.	.	
3	22	M	0.062	0.062	1.19	19.0	0.012	.	.	.	.	
3	23	B	0.062	0.312	2.50	8.0	0.127	.	.	.	.	
4	24	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
4	25	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
4	26	M	0.062	0.125	0.94	7.5	.	.	X	.	.	
4	27	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
4	28	F	0.000	0.125	0.44	3.5	.	0.016	.	.	.	
4	29	B	0.062	0.187	5.75	30.7	0.175	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-MAY-83

SAMPLE CODE: C06545-33

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
7	59	M	0.062	0.062	0.31	5.0	.	.	X	.	.	
7	60	M	0.062	0.062	0.75	12.0	.	.	X	.	.	
7	61	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
7	62	C	0.062	1.250	1.87	1.5	.	.	X	.	.	
8	63	C	0.062	0.187	3.44	18.3	0.105	.	.	.	.	
8	64	F	0.000	0.062	1.69	27.0	0.013	.	.	.	.	
8	65	C	0.062	5.000	5.00	1.0	4.062	.	.	.	.	
8	66	B	0.062	0.187	0.94	5.0	0.029	.	.	.	.	
8	67	C	0.062	1.562	1.67	1.2	0.476	.	.	.	.	
8	68	M	0.062	0.062	0.50	8.0	.	.	X	.	.	
8	69	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
8	70	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
8	71	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
8	72	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
8	73	F	0.000	0.062	0.69	11.0	.	.	X	.	.	
8	74	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
8	75	F	0.000	0.062	0.75	12.0	.	0.007	.	.	.	
8	76	F	0.000	0.125	0.50	4.0	.	0.018	.	.	.	
8	77	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
8	78	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
8	79	M	0.062	0.062	0.81	13.0	0.008	.	.	.	.	
8	80	F	0.000	0.062	0.31	5.0	.	0.003	.	.	.	
9	81	B	0.062	0.250	0.94	3.7	0.038	.	.	.	.	
9	82	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
9	83	F	0.000	0.125	0.69	5.5	0.022	.	.	.	.	
9	84	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
9	85	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
9	86	C	0.062	1.125	1.25	1.1	.	.	X	.	.	
10	87	M	0.062	0.125	1.25	10.0	0.025	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-MAY-83

SAMPLE CODE: C06545-33

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
10	88	C	0.062	0.187	0.62	3.3	0.019	.	.	.	.	
10	89	C	0.062	0.125	0.50	4.0	.	.	X	.	.	
10	90	C	0.062	1.250	1.56	1.2	0.317	.	.	.	.	
10	91	M	0.062	0.062	1.25	20.0	0.013	.	.	.	.	
10	92	F	0.000	0.062	0.94	15.0	.	.	.	X	.	
			Total Mass (Picogram)=				9.524	0.078				
			Total Count =				68.	6.	17.	1.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-33 TABLE PREPARATION DATE: 25-MAY-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	37.	56035.	474.1	0.07 ± 0.01	0.91 ± 0.51	14.23 ± 8.26
	Amphibole	6.	9087.	117.6	0.09 ± 0.03	0.62 ± 0.29	7.92 ± 5.83
	Other	4.	6058.		0.06 ± 0.00	0.84 ± 0.23	13.50 ± 3.70
	All Fiber	47.	71180.		0.07 ± 0.02	0.87 ± 0.47	13.36 ± 7.90
Bundle	Chrysotile	6.	9087.	824.8	0.23 ± 0.05	2.44 ± 2.02	11.06 ±10.55
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	3.	4543.		0.35 ± 0.24	1.48 ± 0.44	5.50 ± 3.97
	All Bundle	9.	13630.		0.27 ± 0.14	2.12 ± 1.68	9.20 ± 9.01
Cluster	Chrysotile	12.	18174.	11729.2	1.16 ± 1.34	2.33 ± 1.60	3.86 ± 4.75
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	5.	7572.		0.80 ± 0.56	1.13 ± 0.53	2.12 ± 1.32
	All Cluster	17.	25746.		1.05 ± 1.16	1.97 ± 1.47	3.35 ± 4.07
Matrix	Chrysotile	13.	19688.	1395.8	0.17 ± 0.33	1.13 ± 0.41	13.96 ± 7.35
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	6.	9087.		0.27 ± 0.48	0.89 ± 0.83	6.58 ± 3.41
	All Matrix	19.	28775.		0.20 ± 0.37	1.05 ± 0.56	11.63 ± 7.19

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/B-4
Individual Grid Opening = 0.000066 Sq Cm
Number of Grid Openings = 10
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-35

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
2	2	F	0.000	0.125	0.62	5.0	0.020	.	.	.	.	
2	3	M	0.062	0.125	1.25	10.0	.	.	X	.	.	
2	4	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
2	5	F	0.000	0.062	0.62	10.0	.	.	.	X	.	
2	6	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	7	F	0.000	0.062	3.19	51.0	0.025	.	.	.	.	
2	8	M	0.062	0.062	0.94	15.0	0.010	.	.	.	.	
2	9	M	0.062	0.062	1.13	18.0	0.011	.	.	.	.	
2	10	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
3	11	M	0.062	0.062	0.50	8.0	.	.	X	.	.	
3	12	B	0.125	0.250	0.81	3.3	.	.	X	.	.	
3	13	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
3	14	M	0.062	0.125	1.25	10.0	.	.	X	.	.	
3	15	C	0.062	0.125	0.75	6.0	0.015	.	.	.	.	
3	16	M	0.062	0.125	0.75	6.0	0.015	.	.	.	.	
4	17	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
5	18	M	0.062	0.250	0.62	2.5	0.025	.	.	.	.	
5	19	M	0.062	0.250	0.87	3.5	0.036	.	.	.	.	
5	20	F	0.000	0.062	1.38	22.0	0.011	.	.	.	.	
5	21	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
5	22	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
5	23	B	0.062	0.125	0.81	6.5	0.017	.	.	.	.	
5	24	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
5	25	F	0.000	0.062	0.25	4.0	.	0.002	.	.	.	
6	26	F	0.000	0.062	2.44	39.0	0.019	.	.	.	.	
6	27	M	0.062	0.062	0.62	10.0	.	.	X	.	.	
6	28	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
6	29	C	0.062	0.125	0.37	3.0	0.008	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-35

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
6	30	F	0.000	0.125	2.63	21.0	0.084	.	.	.	.	
6	31	C	0.062	0.937	1.87	2.0	0.286	.	.	.	.	
7	32	F	0.000	0.187	1.00	5.3	0.072	.	.	.	.	
7	33	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
7	34	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
7	35	F	0.000	0.125	1.75	14.0	0.056	.	.	.	.	
7	36	B	0.062	0.125	0.69	5.5	0.014	.	.	.	.	
7	37	M	0.062	0.125	0.94	7.5	0.019	.	.	.	.	
7	38	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
7	39	M	0.125	0.500	1.25	2.5	.	.	X	.	.	
8	40	C	0.062	0.125	0.87	7.0	0.018	.	.	.	.	
8	41	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
8	42	C	0.062	0.125	1.13	9.0	0.023	.	.	.	.	
8	43	M	0.062	0.062	1.25	20.0	0.013	.	.	.	.	
8	44	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
8	45	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
8	46	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
9	47	C	0.062	0.312	2.50	8.0	0.127	.	.	.	.	
9	48	F	0.000	0.062	1.38	22.0	0.011	.	.	.	.	
9	49	F	0.000	0.125	0.56	4.5	.	0.021	.	.	.	
10	50	F	0.000	0.125	2.50	20.0	0.080	.	.	.	.	
10	51	F	0.000	0.125	0.87	7.0	.	0.032	.	.	.	
10	52	C	0.062	0.250	0.62	2.5	0.025	.	.	.	.	
10	53	M	0.062	0.062	0.50	8.0	0.005	.	.	.	.	
10	54	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
10	55	C	0.062	0.125	0.62	5.0	0.013	.	.	.	.	
10	56	C	0.062	1.250	1.87	1.5	0.381	.	.	.	.	
10	57	B	0.062	0.125	1.25	10.0	0.025	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-35

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
Total Mass (Picogram)=							1.556	0.055				
Total Count =							47.	3.	6.	1.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-35 TABLE PREPARATION DATE: 26-MAY-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	25.	40284.	738.2	0.08 ± 0.03	1.08 ± 0.80	14.41 ±10.73
	Amphibole	3.	4834.	89.0	0.10 ± 0.04	0.56 ± 0.31	5.17 ± 1.61
	Other	1.	1611.		0.06 ± 0.00	0.62 ± 0.00	10.00 ± 0.00
	All Fiber	29.	46729.		0.08 ± 0.03	1.01 ± 0.77	13.30 ±10.36
Bundle	Chrysotile	3.	4834.	90.0	0.12 ± 0.00	0.92 ± 0.30	7.33 ± 2.36
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	1.	1611.		0.25 ± 0.00	0.81 ± 0.00	3.25 ± 0.00
	All Bundle	4.	6445.		0.16 ± 0.06	0.89 ± 0.25	6.31 ± 2.81
Cluster	Chrysotile	9.	14502.	1442.2	0.37 ± 0.42	1.18 ± 0.73	4.89 ± 2.77
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	0.	0.		0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	All Cluster	9.	14502.		0.37 ± 0.42	1.18 ± 0.73	4.89 ± 2.77
Matrix	Chrysotile	10.	16113.	236.3	0.11 ± 0.08	0.82 ± 0.24	10.05 ± 5.90
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	5.	8057.		0.17 ± 0.18	0.98 ± 0.38	8.10 ± 3.25
	All Matrix	15.	24170.		0.13 ± 0.12	0.87 ± 0.29	9.40 ± 5.13

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/E-1
Individual Grid Openins = 0.000062 Sq Cm
Number of Grid Openings = 10
Film Magnification = 20000

S 1 C

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA .
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 02-JUN-83

SAMPLE CODE: C06545-47

Grd Opn	ObJ	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	0.44	7.0	.	.	X	.	.	
1	2	C	0.062	0.500	0.62	1.2	.	.	X	.	.	
1	3	F	0.000	0.062	0.56	9.0	.	.	X	.	.	
1	4	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	5	F	0.000	0.125	0.56	4.5	.	0.021	.	.	.	
2	6	F	0.000	0.375	2.06	5.5	.	0.683	.	.	.	
2	7	B	0.062	0.187	1.19	6.3	0.036	.	.	.	.	
2	8	F	0.000	0.125	0.75	6.0	0.024	.	.	.	.	
3	9	C	0.062	0.125	0.50	4.0	0.010	.	.	.	.	
3	10	F	0.000	0.062	0.75	12.0	.	.	.	X	.	
4	11	F	0.000	0.125	1.25	10.0	0.040	.	.	.	.	
4	12	B	0.062	0.187	10.31	55.0	0.314	.	.	.	.	
4	13	F	0.000	0.062	0.25	4.0	.	.	X	.	.	
4	14	F	0.000	0.062	0.44	7.0	.	.	X	.	.	
4	15	B	0.062	0.125	4.31	34.5	0.088	.	.	.	.	
4	16	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
4	17	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
5	18	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
5	19	M	0.062	0.062	0.75	12.0	0.008	.	.	.	.	
5	20	C	0.125	0.625	3.12	5.0	.	.	X	.	.	
5	21	F	0.000	0.062	0.50	8.0	.	0.005	.	.	.	
5	22	B	0.187	0.625	1.87	3.0	.	.	X	.	.	
5	23	F	0.000	0.062	0.87	14.0	.	.	.	X	.	
6	24	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
6	25	B	0.187	0.500	2.38	4.8	.	.	X	.	.	
6	26	M	0.062	0.062	0.62	10.0	.	.	X	.	.	
6	27	F	0.000	0.125	0.94	7.5	.	.	X	.	.	
6	28	F	0.000	0.062	0.50	8.0	.	.	.	X	.	
7	29	F	0.000	0.062	2.06	33.0	0.016	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 02-JUN-83

SAMPLE CODE: C06545-47

Grd Opn	ObJ	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
7	30	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
7	31	F	0.000	0.062	1.25	20.0	.	.	X	.	.	
7	32	B	0.125	0.187	1.38	7.3	0.084	.	.	.	.	
8	33	B	0.062	0.250	1.87	7.5	0.076	.	.	.	.	
8	34	B	0.125	0.312	2.19	7.0	0.222	.	.	.	.	
8	35	F	0.000	0.062	2.56	41.0	0.020	.	.	.	.	
8	36	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
8	37	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
8	38	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
8	39	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
9	40	F	0.000	0.062	0.81	13.0	.	0.007	.	.	.	
9	41	F	0.000	0.062	2.00	32.0	0.016	.	.	.	.	
9	42	M	0.062	0.062	0.31	5.0	.	.	X	.	.	
9	43	M	0.062	0.125	0.56	4.5	.	.	X	.	.	
9	44	F	0.000	0.062	0.56	9.0	.	.	.	X	.	
9	45	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
9	46	F	0.000	0.062	0.31	5.0	.	.	.	X	.	
10	47	M	0.062	0.062	0.50	8.0	0.005	.	.	.	.	
10	48	F	0.000	0.062	1.56	25.0	0.012	.	.	.	.	
10	49	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
10	50	F	0.000	0.125	0.94	7.5	0.030	.	.	.	.	
10	51	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
10	52	F	0.000	0.062	3.12	50.0	0.025	.	.	.	.	
10	53	F	0.000	0.062	0.75	12.0	.	.	X	.	.	
10	54	F	0.000	0.062	0.62	10.0	.	.	.	X	.	
10	55	F	0.000	0.125	0.94	7.5	0.030	.	.	.	.	
			Total Mass (Picogram)=				1.142	0.716				
			Total Count			=	31.	4.	14.	6.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA

SINGLE SAMPLE SUMMARY TABLES

SAMPLE CODE: C06545-47 TABLE PREPARATION DATE: 02-JUN-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	21.	27429.	382.2	0.07 ± 0.03	1.19 ± 0.72	17.62 ±12.39
	Amphibole	4.	5225.	935.4	0.16 ± 0.15	0.98 ± 0.73	7.75 ± 3.80
	Other	13.	16980.		0.07 ± 0.02	0.63 ± 0.28	9.58 ± 4.21
	All Fiber	38.	49634.		0.08 ± 0.05	0.98 ± 0.65	13.83 ±10.41
Bundle	Chrysotile	6.	7837.	1071.2	0.21 ± 0.06	3.54 ± 3.50	19.61 ±20.53
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	2.	2612.		0.56 ± 0.09	2.13 ± 0.35	3.88 ± 1.24
	All Bundle	8.	10449.		0.30 ± 0.18	3.19 ± 3.03	15.68 ±18.82
Cluster	Chrysotile	1.	1306.	13.3	0.12 ± 0.00	0.50 ± 0.00	4.00 ± 0.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	2.	2612.		0.56 ± 0.09	1.87 ± 1.77	3.12 ± 2.65
	All Cluster	3.	3918.		0.42 ± 0.26	1.42 ± 1.48	3.42 ± 1.94
Matrix	Chrysotile	3.	3918.	24.9	0.06 ± 0.00	0.62 ± 0.12	10.00 ± 2.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	3.	3918.		0.08 ± 0.04	0.50 ± 0.17	6.50 ± 3.04
	All Matrix	6.	7837.		0.07 ± 0.03	0.56 ± 0.15	8.25 ± 3.00

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/B-10
Individual Grid Opening = 0.000077 Sq Cm
Number of Grid Openings = 10
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-39 H/L 230

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	2	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	3	F	0.000	0.125	0.62	5.0	.	.	X	.	.	
1	4	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
1	5	B	0.062	0.187	1.38	7.3	0.042	.	.	.	.	
1	6	M	0.062	0.062	0.50	8.0	0.005	.	.	.	.	
1	7	M	0.062	0.375	1.87	5.0	0.114	.	.	.	.	
1	8	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	9	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	10	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	11	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	12	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
1	13	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	14	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	15	M	0.062	0.062	0.44	7.0	0.004	.	.	.	.	
1	16	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
1	17	B	0.187	1.000	2.50	2.5	1.219	.	.	.	.	
2	18	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
2	19	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
2	20	F	0.000	0.062	0.62	10.0	.	.	X	.	.	
2	21	F	0.000	0.062	0.44	7.0	.	.	X	.	.	
2	22	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	
2	23	B	0.125	0.312	2.13	6.8	0.216	.	.	.	.	
2	24	B	0.062	0.250	1.38	5.5	.	.	X	.	.	
2	25	B	0.125	0.250	1.87	7.5	.	.	X	.	.	
2	26	C	0.187	1.250	3.12	2.5	1.904	.	.	.	.	
2	27	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
2	28	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	29	F	0.000	0.062	1.38	22.0	0.011	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-39

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Pati	X-Ray
2	30	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
2	31	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	32	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
2	33	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
2	34	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
2	35	M	0.062	0.312	0.75	2.4	0.038	.	.	.	.	
3	36	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
3	37	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
4	38	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
4	39	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
4	40	M	0.062	0.062	0.37	6.0	0.004	.	.	.	.	
4	41	C	0.062	0.312	0.62	2.0	0.032	.	.	.	.	
4	42	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
4	43	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
4	44	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
4	45	B	0.062	0.250	1.69	6.8	0.069	.	.	.	.	
5	46	F	0.000	0.125	3.50	28.0	0.112	.	.	.	.	
5	47	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
5	48	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
5	49	M	0.062	0.125	0.75	6.0	0.015	.	.	.	.	
5	50	M	0.062	0.062	0.69	11.0	0.007	.	.	.	.	
5	51	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
5	52	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
6	53	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
6	54	C	0.062	0.312	1.13	3.6	0.057	.	.	.	.	
6	55	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
6	56	C	0.062	0.500	1.25	2.5	0.102	.	.	.	.	
6	57	F	0.000	0.125	1.19	9.5	0.038	.	.	.	.	
6	58	M	0.062	0.125	1.87	15.0	0.038	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-39

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
7	59	B	0.062	0.250	1.13	4.5	0.046	.	.	.	.	
7	60	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
7	61	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
7	62	M	0.062	0.625	2.50	4.0	0.254	.	.	.	.	
7	63	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
7	64	F	0.000	0.062	1.50	24.0	0.012	.	.	.	.	
7	65	F	0.000	0.062	1.06	17.0	0.008	.	.	.	.	
7	66	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
7	67	C	0.062	0.312	0.62	2.0	.	.	X	.	.	
7	68	B	0.062	0.125	1.44	11.5	0.029	.	.	.	.	
7	69	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
7	70	F	0.000	0.125	0.31	2.5	.	.	X	.	.	
7	71	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
7	72	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
7	73	B	0.125	0.625	5.00	8.0	.	.	X	.	.	
7	74	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
7	75	B	0.125	0.312	0.94	3.0	.	.	X	.	.	
7	76	B	0.125	0.312	0.94	3.0	.	.	X	.	.	
7	77	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
7	78	B	0.125	0.312	1.13	3.6	.	.	X	.	.	
7	79	B	0.125	0.312	1.38	4.4	.	.	X	.	.	
7	80	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
7	81	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
7	82	F	0.000	0.062	0.25	4.0	.	.	X	.	.	
7	83	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
8	84	M	0.062	0.125	1.25	10.0	.	.	X	.	.	
8	85	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
8	86	F	0.000	0.062	0.94	15.0	.	.	.	X	.	
8	87	F	0.000	0.062	1.06	17.0	0.008	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-39

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
8	88	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
8	89	C	0.062	0.312	0.37	1.2	.	.	X	.	.	
8	90	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
9	91	C	0.062	0.250	0.62	2.5	0.025	.	.	.	.	
9	92	M	0.062	0.187	0.50	2.7	0.015	.	.	.	.	
9	93	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
9	94	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
9	95	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
9	96	F	0.000	0.062	0.94	15.0	.	.	.	X	.	
9	97	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
9	98	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
10	99	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
10	100	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
			Total Mass (Picogram)=				4.731	0.000				
			Total Count			=	83.	0.	15.	2.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-39 TABLE PREPARATION DATE: 26-MAY-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	59.	84022.	678.7	0.06 ± 0.01	0.77 ± 0.54	11.75 ± 6.70
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	7.	9969.		0.08 ± 0.03	0.59 ± 0.28	8.36 ± 5.12
	All Fiber	66.	93990.		0.07 ± 0.02	0.75 ± 0.52	11.39 ± 6.60
Bundle	Chrysotile	6.	8545.	2306.9	0.35 ± 0.32	1.71 ± 0.51	6.56 ± 3.03
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	7.	9969.		0.34 ± 0.13	1.80 ± 1.45	5.00 ± 2.07
	All Bundle	13.	18513.		0.35 ± 0.23	1.76 ± 1.08	5.72 ± 2.57
Cluster	Chrysotile	5.	7120.	3019.3	0.52 ± 0.42	1.35 ± 1.03	2.62 ± 0.59
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	2.	2848.		0.31 ± 0.00	0.50 ± 0.18	1.60 ± 0.57
	All Cluster	7.	9969.		0.46 ± 0.36	1.11 ± 0.94	2.33 ± 0.73
Matrix	Chrysotile	13.	18513.	732.2	0.17 ± 0.17	0.93 ± 0.68	7.47 ± 3.65
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	1.	1424.		0.12 ± 0.00	1.25 ± 0.00	10.00 ± 0.00
	All Matrix	14.	19937.		0.17 ± 0.17	0.96 ± 0.66	7.65 ± 3.57

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/6A
Individual Grid Opening = 0.000070 Sq Cm
Number of Grid Openings = 10
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 26-MAY-83

SAMPLE CODE: C06545-43 (HL 234)

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	0.44	7.0	.	.	X	.	.	
1	2	F	0.000	0.250	1.56	6.2	.	0.230	.	.	.	
1	3	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	4	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	5	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	6	F	0.000	0.125	0.44	3.5	.	.	.	X	.	
2	7	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
3	8	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
3	9	F	0.000	0.062	2.38	38.0	0.019	.	.	.	.	
3	10	F	0.000	0.062	0.31	5.0	.	.	X	.	.	
3	11	F	0.000	0.062	0.37	6.0	.	.	X	.	.	
4	12	F	0.000	0.125	0.50	4.0	0.016	.	.	.	.	
6	13	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
8	14	F	0.000	0.125	1.06	8.5	.	.	X	.	.	
8	15	F	0.000	0.062	0.44	7.0	.	.	.	X	.	
9	16	F	0.000	0.062	0.62	10.0	.	.	X	.	.	
9	17	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
9	18	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
9	19	B	0.125	0.750	1.87	2.5	.	.	X	.	.	
9	20	F	0.000	0.062	0.56	9.0	.	.	X	.	.	
9	21	F	0.000	0.062	0.62	10.0	.	.	X	.	.	
10	22	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
			Total Mass (Picogram)=				0.081	0.230				
			Total Count			=	11.	1.	8.	2.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-43 TABLE PREPARATION DATE: 26-MAY-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	10.	13639.	102.0	0.07 ± 0.02	0.79 ± 0.58	12.20 ± 9.55
	Amphibole	1.	1364.	313.8	0.25 ± 0.00	1.56 ± 0.00	6.25 ± 0.00
	Other	9.	12275.		0.08 ± 0.03	0.54 ± 0.22	7.33 ± 2.25
	All Fiber	20.	27278.		0.08 ± 0.05	0.72 ± 0.48	9.71 ± 7.21
Bundle	Chrysotile	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	1.	1364.		0.75 ± 0.00	1.87 ± 0.00	2.50 ± 0.00
	All Bundle	1.	1364.		0.75 ± 0.00	1.87 ± 0.00	2.50 ± 0.00
Matrix	Chrysotile	1.	1364.	8.7	0.06 ± 0.00	0.62 ± 0.00	10.00 ± 0.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	0.	0.		0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	All Matrix	1.	1364.		0.06 ± 0.00	0.62 ± 0.00	10.00 ± 0.00

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/10A
Individual Grid Opening = 0.000073 Sq Cm
Number of Grid Openings = 10
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 02-JUN-83

SAMPLE CODE: C06545-48 (230) 230 Saw A/C Sheet

Grd Opn	ObJ	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picograms) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	2	C	0.062	0.625	0.62	1.0	.	.	X	.	.	
1	3	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	4	F	0.000	0.062	0.44	7.0	.	.	X	.	.	
1	5	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	6	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
1	7	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	8	F	0.000	0.125	0.56	4.5	.	.	X	.	.	
1	9	F	0.000	0.125	0.69	5.5	.	.	X	.	.	
1	10	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	11	B	0.062	0.187	1.44	7.7	0.044	.	.	.	.	
1	12	B	0.062	0.187	0.69	3.7	.	.	X	.	.	
1	13	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
1	14	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
1	15	M	0.062	0.125	0.62	5.0	0.013	.	.	.	.	
1	16	M	0.062	0.062	0.81	13.0	0.008	.	.	.	.	
1	17	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	18	B	0.125	0.125	1.19	9.5	.	.	X	.	.	
1	19	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
1	20	F	0.000	0.062	0.75	12.0	.	.	X	.	.	
1	21	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
1	22	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	23	C	0.062	0.187	1.25	6.7	.	.	X	.	.	
1	24	B	0.187	0.500	5.94	11.9	1.447	.	.	.	.	
1	25	M	0.062	0.062	0.69	11.0	0.007	.	.	.	.	
1	26	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	27	F	0.000	0.062	0.62	10.0	.	.	.	X	.	
1	28	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	29	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 02-JUN-83

SAMPLE CODE: C06545-48

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	30	M	0.062	0.062	1.25	20.0	0.013	.	.	.	.	
1	31	F	0.000	0.062	0.56	9.0	.	0.005	.	.	.	
1	32	F	0.000	0.125	1.13	9.0	0.036	.	.	.	.	
1	33	F	0.000	0.125	1.94	15.5	0.062	.	.	.	.	
2	34	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
2	35	B	0.125	0.312	1.87	6.0	.	.	X	.	.	
2	36	M	0.062	0.187	1.25	6.7	0.038	.	.	.	.	
2	37	F	0.000	0.062	0.31	5.0	.	.	.	X	.	
2	38	F	0.000	0.062	0.50	8.0	.	.	.	X	.	
2	39	F	0.000	0.062	0.31	5.0	.	.	X	.	.	
2	40	M	0.062	0.187	0.50	2.7	.	.	X	.	.	
2	41	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
2	42	B	0.062	0.312	3.88	12.4	0.197	.	.	.	.	
2	43	F	0.000	0.062	0.44	7.0	.	.	X	.	.	
2	44	B	0.062	0.500	3.00	6.0	0.244	.	.	.	.	
2	45	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
2	46	F	0.000	0.062	0.56	9.0	.	.	.	X	.	
2	47	F	0.000	0.125	0.37	3.0	0.012	.	.	.	.	
3	48	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
3	49	F	0.000	0.062	0.50	8.0	.	.	X	.	.	
3	50	F	0.000	0.125	0.37	3.0	0.012	.	.	.	.	
3	51	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
3	52	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
3	53	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	
3	54	F	0.000	0.062	0.56	9.0	.	0.005	.	.	.	
3	55	M	0.062	0.687	5.00	7.3	0.559	.	.	.	.	
3	56	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
3	57	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
3	58	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 02-JUN-83

SAMPLE CODE: C06545-48

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
3	59	F	0.000	0.062	1.06	17.0	0.008	.	.	.	.	
3	60	F	0.000	0.062	1.63	26.0	0.013	.	.	.	.	
3	61	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
3	62	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
3	63	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
3	64	F	0.000	0.125	0.50	4.0	0.016	.	.	.	.	
3	65	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
3	66	M	0.062	0.062	1.19	19.0	0.012	.	.	.	.	
3	67	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
3	68	M	0.062	0.062	0.50	8.0	0.005	.	.	.	.	
3	69	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
3	70	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
3	71	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
3	72	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
3	73	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
3	74	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
3	75	C	0.062	0.312	0.62	2.0	0.032	.	.	.	.	
3	76	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
3	77	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	
3	78	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
3	79	F	0.000	0.062	0.56	9.0	.	.	X	.	.	
3	80	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
3	81	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
3	82	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
3	83	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
3	84	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
3	85	C	0.125	1.250	2.50	2.0	.	.	X	.	.	
3	86	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
3	87	B	0.062	0.437	2.50	5.7	.	.	X	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 02-JUN-83

SAMPLE CODE: C06545-48

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
4	88	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
4	89	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
4	90	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
4	91	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
4	92	M	0.062	0.187	0.62	3.3	0.019	.	.	.	.	
4	93	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
4	94	F	0.000	0.062	0.62	10.0	.	.	X	.	.	
4	95	F	0.000	0.062	2.19	35.0	0.017	.	.	.	.	
4	96	M	0.062	0.062	0.75	12.0	0.008	.	.	.	.	
4	97	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
4	98	M	0.062	0.062	0.62	10.0	.	.	X	.	.	
5	99	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	
5	100	F	0.000	0.062	0.44	7.0	.	.	.	X	.	
5	101	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
5	102	F	0.000	0.062	1.31	21.0	0.010	.	.	.	.	
5	103	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
5	104	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
5	105	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
5	106	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
5	107	M	0.062	0.625	1.25	2.0	.	.	X	.	.	
			Total Mass (Picogram)=				3.121	0.010				
			Total Count =				81.	2.	19.	5.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-48 TABLE PREPARATION DATE: 02-JUN-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	65.	177402.	1283.1	0.07 ± 0.02	0.71 ± 0.39	10.79 ± 5.88
	Amphibole	2.	5459.	28.3	0.06 ± 0.00	0.56 ± 0.00	9.00 ± 0.00
	Other	14.	38210.		0.07 ± 0.02	0.52 ± 0.13	7.64 ± 2.21
	All Fiber	81.	221070.		0.07 ± 0.02	0.67 ± 0.36	10.20 ± 5.47
Bundle	Chrysotile	4.	10917.	5271.8	0.37 ± 0.15	3.56 ± 1.88	9.49 ± 3.14
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	4.	10917.		0.27 ± 0.14	1.56 ± 0.79	6.22 ± 2.42
	All Bundle	8.	21834.		0.32 ± 0.15	2.56 ± 1.71	7.85 ± 3.13
Cluster	Chrysotile	1.	2729.	86.6	0.31 ± 0.00	0.62 ± 0.00	2.00 ± 0.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	3.	8188.		0.69 ± 0.53	1.46 ± 0.95	3.22 ± 3.02
	All Cluster	4.	10917.		0.59 ± 0.47	1.25 ± 0.88	2.92 ± 2.54
Matrix	Chrysotile	11.	30022.	1876.2	0.15 ± 0.19	1.21 ± 1.29	10.48 ± 5.33
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	3.	8188.		0.29 ± 0.30	0.79 ± 0.40	4.89 ± 4.44
	All Matrix	14.	38210.		0.18 ± 0.21	1.12 ± 1.15	9.28 ± 5.53

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/C-6
Individual Grid Opening = 0.000073 Sq Cm
Number of Grid Openings = 5
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-54 2274

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	2	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	3	M	0.125	0.187	4.63	24.7	0.282	.	.	.	.	
2	4	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	5	C	0.062	0.312	0.62	2.0	.	.	X	.	.	
2	6	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
2	7	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
2	8	B	0.125	0.250	3.75	15.0	.	.	X	.	.	
2	9	F	0.000	0.062	1.31	21.0	0.010	.	.	.	.	
2	10	F	0.000	0.062	1.19	19.0	.	.	X	.	.	
2	11	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
2	12	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
2	13	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
2	14	F	0.000	0.062	1.13	18.0	.	.	X	.	.	
2	15	F	0.000	0.125	2.13	17.0	.	.	X	.	.	
2	16	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	17	C	0.062	0.375	1.87	5.0	0.114	.	.	.	.	
2	18	F	0.000	0.062	1.06	17.0	0.008	.	.	.	.	
2	19	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
2	20	F	0.000	0.062	2.19	35.0	0.017	.	.	.	.	
2	21	C	0.062	0.187	0.62	3.3	.	.	X	.	.	
2	22	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
2	23	F	0.000	0.062	2.38	38.0	0.019	.	.	.	.	
2	24	M	0.062	0.375	0.62	1.7	0.038	.	.	.	.	
2	25	B	0.125	0.187	1.87	10.0	.	.	X	.	.	
2	26	B	0.125	0.187	2.19	11.7	.	.	X	.	.	
2	27	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
3	28	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
3	29	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA .
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-54

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
3	30	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
3	31	B	0.062	0.187	4.06	21.7	0.124	.	.	.	.	
3	32	C	0.062	0.312	0.62	2.0	.	.	X	.	.	
3	33	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
3	34	C	0.062	0.125	0.44	3.5	.	.	X	.	.	
3	35	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
3	36	M	0.062	0.062	1.06	17.0	0.011	.	.	.	.	
4	37	B	0.062	0.187	2.50	13.3	0.076	.	.	.	.	
4	38	B	0.062	0.375	1.87	5.0	0.114	.	.	.	.	
4	39	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
4	40	M	0.062	0.125	0.62	5.0	0.013	.	.	.	.	
4	41	B	0.062	0.187	2.19	11.7	0.067	.	.	.	.	
4	42	F	0.000	0.062	1.56	25.0	0.012	.	.	.	.	
4	43	B	0.062	0.250	2.25	9.0	0.091	.	.	.	.	
4	44	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
4	45	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
4	46	M	0.062	0.062	0.44	7.0	.	.	X	.	.	
4	47	C	0.062	0.125	0.37	3.0	.	.	X	.	.	
4	48	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
4	49	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
4	50	B	0.062	0.125	0.56	4.5	.	.	X	.	.	
4	51	B	0.187	1.250	5.94	4.8	.	.	X	.	.	
4	52	B	0.125	0.250	1.69	6.8	0.137	.	.	.	.	
4	53	F	0.000	0.125	1.13	9.0	0.036	.	.	.	.	
4	54	M	0.062	0.187	1.63	8.7	0.050	.	.	.	.	
4	55	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	
4	56	C	0.062	0.625	0.94	1.5	.	.	X	.	.	
4	57	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
4	58	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-54

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
5	59	F	0.000	0.062	0.75	12.0	.	.	X	.	.	
5	60	B	0.062	0.250	1.25	5.0	.	.	X	.	.	
5	61	M	0.062	0.625	1.56	2.5	.	.	X	.	.	
5	62	B	0.062	0.250	1.87	7.5	0.076	.	.	.	.	
5	63	B	0.125	0.312	10.63	34.0	.	.	X	.	.	
5	64	B	0.125	0.312	4.37	14.0	.	.	X	.	.	
5	65	C	0.062	0.625	2.00	3.2	.	.	X	.	.	
5	66	B	0.062	0.187	3.12	16.7	.	.	X	.	.	
5	67	B	0.062	0.187	1.63	8.7	.	.	X	.	.	
5	68	M	0.062	0.187	0.62	3.3	0.019	.	.	.	.	
5	69	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
5	70	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
5	71	F	0.000	0.062	0.31	5.0	.	.	X	.	.	
5	72	C	0.062	0.625	0.62	1.0	.	.	X	.	.	
5	73	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
5	74	B	0.187	0.750	5.62	7.5	2.057	.	.	.	.	
5	75	M	0.062	0.062	1.13	18.0	.	.	X	.	.	
5	76	M	0.062	0.062	1.13	18.0	0.011	.	.	.	.	
5	77	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
5	78	F	0.000	0.062	0.56	9.0	.	.	X	.	.	
5	79	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
5	80	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
5	81	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
5	82	F	0.000	0.062	0.50	8.0	.	0.005	.	.	.	
5	83	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
5	84	F	0.000	0.125	0.75	6.0	.	.	X	.	.	
5	85	C	0.062	0.125	1.25	10.0	0.025	.	.	.	.	
5	86	B	0.125	0.500	2.75	5.5	.	.	X	.	.	
5	87	M	0.062	0.250	2.19	8.7	0.089	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-54

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
5	88	M	0.062	0.187	1.87	10.0	0.057	.	.	.	.	
5	89	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
5	90	M	0.062	0.062	1.31	21.0	0.013	.	.	.	.	
5	91	B	0.062	0.125	1.25	10.0	.	.	X	.	.	
5	92	F	0.000	0.062	1.63	26.0	0.013	.	.	.	.	
6	93	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
6	94	F	0.000	0.062	1.63	26.0	0.013	.	.	.	.	
6	95	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
6	96	M	0.062	0.187	1.25	6.7	0.038	.	.	.	.	
6	97	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
6	98	F	0.000	0.062	0.56	9.0	.	0.005	.	.	.	
7	99	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
7	100	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
7	101	M	0.062	0.062	0.56	9.0	0.006	.	.	.	.	
			Total Mass (Picogram)=				3.853	0.010				
			Total Count			=	69.	2.	30.	0.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-54 TABLE PREPARATION DATE: 25-JUN-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	47.	91625.	672.5	0.06 ± 0.01	0.85 ± 0.49	13.38 ± 7.86
	Amphibole	2.	3899.	19.1	0.06 ± 0.00	0.53 ± 0.04	8.50 ± 0.71
	Other	7.	13646.		0.08 ± 0.03	0.97 ± 0.59	12.29 ± 5.82
	All Fiber	56.	109170.		0.07 ± 0.01	0.85 ± 0.50	13.07 ± 7.50
Bundle	Chrysotile	8.	15596.	5345.8	0.30 ± 0.19	2.76 ± 1.38	10.30 ± 5.32
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	12.	23394.		0.32 ± 0.31	3.28 ± 2.77	11.65 ± 8.18
	All Bundle	20.	38989.		0.32 ± 0.26	3.07 ± 2.28	11.11 ± 7.05
Cluster	Chrysotile	2.	3899.	272.2	0.25 ± 0.18	1.56 ± 0.44	7.50 ± 3.54
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	8.	15596.		0.37 ± 0.23	0.78 ± 0.52	2.44 ± 0.94
	All Cluster	10.	19495.		0.34 ± 0.21	0.94 ± 0.58	3.45 ± 2.57
Matrix	Chrysotile	12.	23394.	1221.4	0.16 ± 0.09	1.46 ± 1.13	11.15 ± 7.31
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	3.	5848.		0.25 ± 0.32	1.04 ± 0.57	9.17 ± 7.97
	All Matrix	15.	29242.		0.18 ± 0.15	1.38 ± 1.04	10.75 ± 7.19

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/D-7
Individual Grid Openings = 0.000073 Sq Cm
Number of Grid Openings = 7
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 02-JUN-83

SAMPLE CODE: C06545-49

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	M	0.062	0.062	0.94	15.0	0.010	.	.	.	.	
1	2	M	0.062	0.125	0.75	6.0	.	.	X	.	.	
1	3	M	0.062	0.062	0.56	9.0	.	.	X	.	.	
1	4	B	0.187	1.875	11.25	6.0	.	.	X	.	.	
1	5	C	0.062	0.312	0.50	1.6	.	.	X	.	.	
1	6	C	0.062	0.312	0.50	1.6	.	.	X	.	.	
1	7	B	0.062	0.125	1.25	10.0	0.025	.	.	.	.	
1	8	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
1	9	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
1	10	F	0.000	0.062	3.63	58.0	0.029	.	.	.	.	
1	11	F	0.000	0.062	1.25	20.0	.	0.012	.	.	.	
1	12	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
1	13	M	0.062	0.062	0.75	12.0	0.008	.	.	.	.	
1	14	F	0.000	0.687	5.13	7.5	.	5.707	.	.	.	
2	15	M	0.062	0.062	0.94	15.0	0.010	.	.	.	.	
2	16	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
2	17	M	0.125	0.187	1.31	7.0	.	.	X	.	.	
2	18	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
2	19	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
2	20	B	0.062	0.812	2.00	2.5	0.264	.	.	.	.	
3	21	C	0.062	0.625	0.81	1.3	.	.	X	.	.	
3	22	F	0.000	0.062	0.56	9.0	.	.	.	X	.	
3	23	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
3	24	M	0.062	0.062	0.94	15.0	0.010	.	.	.	.	
3	25	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
3	26	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
3	27	F	0.000	0.125	1.94	15.5	0.062	.	.	.	.	
3	28	F	0.000	0.062	1.19	19.0	.	0.011	.	.	.	
4	29	C	0.062	0.500	1.25	2.5	.	.	X	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 02-JUN-83

SAMPLE CODE: C06545-49

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
4	30	C	0.062	0.187	0.62	3.3	0.019	.	.	.	.	
4	31	C	0.062	1.250	1.87	1.5	.	.	X	.	.	
4	32	F	0.000	0.062	0.69	11.0	.	0.006	.	.	.	
5	33	B	0.062	0.250	1.13	4.5	.	.	X	.	.	
5	34	F	0.000	0.125	1.69	13.5	.	0.062	.	.	.	
5	35	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
5	36	M	0.062	0.062	0.94	15.0	0.010	.	.	.	.	
5	37	M	0.062	0.187	0.75	4.0	0.023	.	.	.	.	
5	38	M	0.062	0.625	1.25	2.0	.	.	X	.	.	
5	39	M	0.062	0.312	0.62	2.0	.	.	X	.	.	
5	40	M	0.062	0.062	0.87	14.0	0.009	.	.	.	.	
5	41	F	0.000	0.062	0.69	11.0	.	.	X	.	.	
5	42	F	0.000	0.125	0.75	6.0	0.024	.	.	.	.	
5	43	F	0.000	0.125	0.69	5.5	.	0.025	.	.	.	
6	44	F	0.000	0.062	3.00	48.0	0.024	.	.	.	.	
6	45	F	0.000	0.062	1.06	17.0	0.008	.	.	.	.	
6	46	F	0.000	0.125	2.75	22.0	0.088	.	.	.	.	
6	47	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
6	48	F	0.000	0.187	0.81	4.3	.	0.067	.	.	.	
6	49	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
6	50	M	0.062	0.125	5.00	40.0	0.102	.	.	.	.	
6	51	F	0.000	0.062	1.69	27.0	0.013	.	.	.	.	
6	52	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
6	53	F	0.000	0.062	3.44	55.0	0.027	.	.	.	.	
6	54	C	0.062	0.625	1.87	3.0	.	.	X	.	.	
7	55	M	0.062	0.062	1.00	16.0	.	.	X	.	.	
7	56	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
7	57	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
7	58	C	0.062	0.750	0.75	1.0	.	.	X	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 02-JUN-83

SAMPLE CODE: C06545-49

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
7	59	B	0.062	0.187	0.75	4.0	.	.	X	.	.	
7	60	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
7	61	M	0.062	0.500	3.12	6.2	0.254	.	.	.	.	
7	62	C	0.062	1.250	2.19	1.8	0.444	.	.	.	.	
7	63	F	0.000	0.125	2.81	22.5	0.090	.	.	X	.	
7	64	F	0.000	0.062	0.25	4.0	.	.	.	.	.	
7	65	F	0.000	0.125	0.69	5.5	.	0.025	.	.	.	
8	66	M	0.062	0.062	0.69	11.0	0.007	.	.	.	.	
8	67	F	0.000	0.062	3.88	62.0	0.031	.	.	.	.	
8	68	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
8	69	B	0.062	0.187	1.87	10.0	0.057	.	.	.	.	
8	70	C	0.062	1.562	3.12	2.0	.	.	X	.	.	
9	71	M	0.062	0.187	0.62	3.3	0.019	.	.	.	.	
9	72	M	0.062	0.125	1.25	10.0	.	.	X	.	.	
9	73	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
9	74	F	0.000	0.062	8.12	130.0	0.065	.	.	.	.	
9	75	C	0.062	0.250	1.87	7.5	.	.	X	.	.	
9	76	B	0.062	0.125	1.25	10.0	0.025	.	.	.	.	
9	77	F	0.000	0.062	0.50	8.0	.	.	X	.	.	
9	78	M	0.062	0.062	2.50	40.0	0.025	.	.	.	.	
9	79	B	0.125	0.125	5.38	43.0	0.218	.	.	.	.	
9	80	M	0.062	0.187	0.94	5.0	0.029	.	.	.	.	
9	81	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
9	82	F	0.000	0.125	0.44	3.5	.	.	X	.	.	
9	83	F	0.000	0.062	6.56	105.0	0.052	.	.	.	.	
10	84	F	0.000	0.125	0.94	7.5	0.030	.	.	.	.	
10	85	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
10	86	F	0.000	0.125	0.94	7.5	0.030	.	.	.	.	
10	87	F	0.000	0.125	1.50	12.0	0.048	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 02-JUN-83

SAMPLE CODE: C06545-49

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
10	88	F	0.000	0.062	0.44	7.0	.	.	.	X	.	
10	89	C	0.062	0.312	1.25	4.0	0.063	.	.	.	.	
10	90	M	0.062	0.125	0.62	5.0	0.013	.	.	.	.	
			Total Mass (Picogram)=				2.404	5.916				
			Total Count =				57.	8.	22.	3.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-49 TABLE PREPARATION DATE: 02-JUN-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	32.	43040.	997.7	0.08 ± 0.03	1.82 ± 1.76	26.16 ±28.49
	Amphibole	8.	10760.	7956.8	0.18 ± 0.21	1.52 ± 1.50	10.79 ± 6.19
	Other	6.	8070.		0.07 ± 0.03	0.48 ± 0.15	7.08 ± 2.91
	All Fiber	46.	61870.		0.09 ± 0.09	1.59 ± 1.64	21.00 ±25.09
Bundle	Chrysotile	5.	6725.	794.0	0.28 ± 0.30	2.35 ± 1.73	15.09 ±15.94
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	3.	4035.		0.77 ± 0.96	4.37 ± 5.96	4.83 ± 1.04
	All Bundle	8.	10760.		0.46 ± 0.62	3.11 ± 3.60	11.25 ±13.18
Cluster	Chrysotile	3.	4035.	708.6	0.58 ± 0.58	1.35 ± 0.79	3.03 ± 1.16
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	9.	12105.		0.69 ± 0.45	1.40 ± 0.87	2.44 ± 1.99
	All Cluster	12.	16140.		0.66 ± 0.46	1.39 ± 0.81	2.59 ± 1.79
Matrix	Chrysotile	17.	22865.	732.5	0.12 ± 0.11	1.26 ± 1.19	13.56 ±10.75
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	7.	9415.		0.21 ± 0.20	0.96 ± 0.32	7.43 ± 4.89
	All Matrix	24.	32280.		0.15 ± 0.14	1.18 ± 1.01	11.77 ± 9.74

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/C-7
Individual Grid Opening = 0.000074 Sq Cm
Number of Grid Openings = 10
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 02-JUN-83

SAMPLE CODE: C06545-50 (2 of 2)

Grd Opn	ObJ	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	2.50	40.0	0.020	.	.	.	.	
1	2	B	0.187	0.312	0.94	3.0	0.143	.	.	.	.	
1	3	F	0.000	0.062	0.44	7.0	.	.	X	.	.	
1	4	F	0.000	0.062	0.62	10.0	.	.	.	X	.	
1	5	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
1	6	F	0.000	0.125	1.25	10.0	0.040	.	.	.	.	
1	7	B	0.062	0.125	1.13	9.0	.	.	X	.	.	
1	8	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
1	9	B	0.125	0.437	14.25	32.6	2.026	.	.	.	.	
2	10	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
2	11	M	0.062	0.062	1.13	18.0	0.011	.	.	.	.	
2	12	M	0.062	0.062	0.94	15.0	.	.	X	.	.	
2	13	M	0.062	0.187	0.62	3.3	0.019	.	.	.	.	
2	14	C	0.062	0.625	1.25	2.0	0.127	.	.	.	.	
2	15	B	0.062	0.375	1.50	4.0	0.091	.	.	.	.	
2	16	M	0.062	0.062	0.75	12.0	0.008	.	.	.	.	
2	17	F	0.000	0.125	1.25	10.0	0.040	.	.	.	.	
3	18	B	0.125	0.875	2.19	2.5	0.622	.	.	.	.	
3	19	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
3	20	B	0.062	0.312	2.50	8.0	0.127	.	.	.	.	
3	21	M	0.062	0.062	0.94	15.0	0.010	.	.	.	.	
3	22	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
3	23	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
3	24	F	0.000	0.125	0.87	7.0	0.028	.	.	.	.	
3	25	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
4	26	F	0.000	0.312	1.63	5.2	.	0.374	.	.	.	
5	27	B	0.062	0.250	1.38	5.5	.	.	X	.	.	
6	28	F	0.000	0.062	0.81	13.0	.	.	X	.	.	
7	29	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 02-JUN-83

SAMPLE CODE: C06545-50

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
7	30	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
7	31	F	0.000	0.062	0.62	10.0	.	.	.	X	.	
7	32	F	0.000	0.062	0.37	6.0	.	.	.	X	.	
7	33	F	0.000	0.062	0.31	5.0	.	.	X	.	.	
7	34	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
7	35	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
7	36	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
7	37	F	0.000	0.062	2.44	39.0	0.019	.	.	.	.	
7	38	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
7	39	F	0.000	0.125	0.87	7.0	0.028	.	.	.	.	
8	40	M	0.062	0.062	0.44	7.0	.	.	X	.	.	
8	41	F	0.000	0.125	0.37	3.0	.	0.014	.	.	.	
8	42	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
8	43	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
9	44	F	0.000	0.062	2.19	35.0	0.017	.	.	.	.	
10	45	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
10	46	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
			Total Mass (Picogram)=				3.480	0.388				
			Total Count			=	34.	2.	7.	3.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-50 TABLE PREPARATION DATE: 02-JUN-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	21.	30034.	396.4	0.07 ± 0.03	1.05 ± 0.66	15.14 ±10.94
	Amphibole	2.	2860.	554.5	0.22 ± 0.13	1.00 ± 0.88	4.10 ± 1.56
	Other	6.	8581.		0.06 ± 0.00	0.53 ± 0.19	8.50 ± 3.02
	All Fiber	29.	41476.		0.08 ± 0.05	0.94 ± 0.62	13.01 ±10.03
Bundle	Chrysotile	5.	7151.	4304.1	0.46 ± 0.24	4.28 ± 5.61	10.01 ±12.79
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	2.	2860.		0.19 ± 0.09	1.25 ± 0.18	7.25 ± 2.47
	All Bundle	7.	10011.		0.38 ± 0.24	3.41 ± 4.81	9.22 ±10.58
Cluster	Chrysotile	1.	1430.	181.6	0.62 ± 0.00	1.25 ± 0.00	2.00 ± 0.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	0.	0.		0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	All Cluster	1.	1430.		0.62 ± 0.00	1.25 ± 0.00	2.00 ± 0.00
Matrix	Chrysotile	7.	10011.	95.3	0.08 ± 0.05	0.76 ± 0.20	11.19 ± 4.61
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	2.	2860.		0.06 ± 0.00	0.69 ± 0.35	11.00 ± 5.66
	All Matrix	9.	12872.		0.08 ± 0.04	0.74 ± 0.22	11.15 ± 4.47

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/C-8
Individual Grid Openings = 0.000070 Sq Cm
Number of Grid Openings = 10
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 02-JUN-83

SAMPLE CODE: C06545-51

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	M	0.062	0.125	0.37	3.0	.	.	X	.	.	
1	2	M	0.062	0.062	0.44	7.0	0.004	.	.	.	.	
1	3	F	0.000	0.125	0.62	5.0	0.020	.	.	.	.	
2	4	F	0.000	0.062	0.69	11.0	.	0.006	.	.	.	
2	5	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
4	6	F	0.000	0.125	1.00	8.0	.	0.037	.	.	.	
4	7	M	0.062	0.062	0.75	12.0	0.008	.	.	.	.	
4	8	M	0.062	0.500	0.75	1.5	0.061	.	.	.	.	
4	9	F	0.000	0.062	0.44	7.0	.	.	.	X	.	
5	10	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
5	11	B	0.062	0.187	1.31	7.0	0.040	.	.	.	.	
5	12	B	0.062	0.375	3.00	8.0	0.183	.	.	.	.	
6	13	F	0.000	0.062	1.63	26.0	0.013	.	.	.	.	
6	14	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
6	15	F	0.000	0.062	2.44	39.0	0.019	.	.	.	.	
6	16	B	0.125	0.625	1.87	3.0	.	.	X	.	.	
7	17	M	0.062	0.062	1.13	18.0	.	.	X	.	.	
7	18	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
7	19	M	0.062	0.062	0.62	10.0	.	.	X	.	.	
7	20	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
7	21	M	0.062	0.062	0.50	8.0	.	.	X	.	.	
7	22	B	0.062	0.187	1.25	6.7	0.038	.	.	.	.	
9	23	F	0.000	0.062	3.00	48.0	.	.	.	X	.	
9	24	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
9	25	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
10	26	F	0.000	0.062	0.50	8.0	.	.	.	X	.	
10	27	B	0.062	0.625	3.75	6.0	0.381	.	.	.	.	
10	28	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
10	29	B	0.062	0.125	0.94	7.5	0.019	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 02-JUN-83

SAMPLE CODE: C06545-51

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
10	30	B	0.062	0.312	1.87	6.0	0.095	.	.	.	.	
			Total Mass (Picogram)=				0.925	0.043				
			Total Count			=	20.	2.	5.	3.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-51 TABLE PREPARATION DATE: 02-JUN-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	9.	11844.	110.2	0.07 ± 0.02	0.96 ± 0.66	14.78 ±10.97
	Amphibole	2.	2632.	56.8	0.09 ± 0.04	0.84 ± 0.22	9.50 ± 2.12
	Other	3.	3948.		0.06 ± 0.00	1.31 ± 1.46	21.00 ±23.39
	All Fiber	14.	18423.		0.07 ± 0.02	1.02 ± 0.79	15.36 ±13.09
Bundle	Chrysotile	6.	7896.	994.9	0.30 ± 0.18	2.02 ± 1.12	6.86 ± 0.81
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	1.	1316.		0.62 ± 0.00	1.87 ± 0.00	3.00 ± 0.00
	All Bundle	7.	9212.		0.35 ± 0.21	2.00 ± 1.02	6.31 ± 1.63
Matrix	Chrysotile	5.	6580.	112.8	0.15 ± 0.20	0.64 ± 0.13	8.10 ± 4.10
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	4.	5264.		0.08 ± 0.03	0.66 ± 0.33	9.75 ± 6.24
	All Matrix	9.	11844.		0.12 ± 0.14	0.65 ± 0.22	8.83 ± 4.87

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/C-9
Individual Grid Openings = 0.000076 Sq Cm
Number of Grid Openings = 10
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-52 250

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	B	0.062	0.187	2.69	14.3	0.082	.	.	.	.	
1	2	B	0.062	0.125	1.00	8.0	0.020	.	.	.	.	
1	3	F	0.000	0.062	0.31	5.0	.	0.003	.	.	.	
6	4	C	0.062	0.187	1.19	6.3	0.036	.	.	.	.	
6	5	F	0.000	0.062	1.44	23.0	0.011	.	.	.	.	
6	6	B	0.062	0.250	5.50	22.0	0.223	.	.	.	.	
7	7	F	0.000	0.312	2.31	7.4	.	0.532	.	.	.	
7	8	F	0.000	0.250	0.94	3.7	.	.	.	X	.	
7	9	F	0.000	0.125	0.62	5.0	.	.	.	.	X	
8	10	B	0.125	0.625	1.87	3.0	0.381	.	.	.	.	
8	11	M	0.062	0.062	0.56	9.0	0.006	.	.	.	.	
8	12	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
8	13	F	0.000	0.062	0.56	9.0	.	.	.	X	.	
9	14	F	0.000	0.062	1.56	25.0	0.012	.	.	.	.	
9	15	F	0.000	0.062	0.75	12.0	.	.	.	X	.	
9	16	F	0.000	0.125	1.19	9.5	0.038	.	.	.	.	
9	17	B	0.062	0.250	0.69	2.8	0.028	.	.	.	.	
9	18	M	0.062	0.062	0.50	8.0	0.005	.	.	.	.	
9	19	B	0.125	0.187	3.00	16.0	0.183	.	.	.	.	
10	20	F	0.000	0.062	0.81	13.0	.	.	.	X	.	
10	21	F	0.000	0.062	1.19	19.0	.	0.011	.	.	.	
			Total Mass (Picogram)=				1.032	0.546				
			Total Count			=	13.	3.	0.	4.	1.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA

SINGLE SAMPLE SUMMARY TABLES

SAMPLE CODE: C06545-52 TABLE PREPARATION DATE: 25-JUN-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	4.	5741.	96.6	0.08 ± 0.03	1.22 ± 0.39	17.13 ± 8.00
	Amphibole	3.	4305.	783.4	0.15 ± 0.14	1.27 ± 1.00	10.47 ± 7.49
	Other	5.	7176.		0.11 ± 0.08	0.74 ± 0.15	8.55 ± 4.11
	All Fiber	12.	17222.		0.11 ± 0.08	1.03 ± 0.55	11.89 ± 7.03
Bundle	Chrysotile	6.	8611.	1316.4	0.27 ± 0.18	2.46 ± 1.74	11.01 ± 7.72
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	0.	0.		0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	All Bundle	6.	8611.		0.27 ± 0.18	2.46 ± 1.74	11.01 ± 7.72
Cluster	Chrysotile	1.	1435.	51.9	0.19 ± 0.00	1.19 ± 0.00	6.33 ± 0.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	0.	0.		0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	All Cluster	1.	1435.		0.19 ± 0.00	1.19 ± 0.00	6.33 ± 0.00
Matrix	Chrysotile	2.	2870.	15.5	0.06 ± 0.00	0.53 ± 0.04	8.50 ± 0.71
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	0.	0.		0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	All Matrix	2.	2870.		0.06 ± 0.00	0.53 ± 0.04	8.50 ± 0.71

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182/C-10
Individual Grid Openings = 0.000070 Sq Cm
Number of Grid Openings = 10
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-53 2<4

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	M	0.062	0.125	0.94	7.5	0.019	.	.	.	.	
1	2	F	0.000	0.062	1.13	18.0	.	.	.	X	.	
1	3	C	0.062	0.125	0.87	7.0	0.018	.	.	.	.	
2	4	F	0.000	0.062	0.50	8.0	.	.	.	X	.	
2	5	M	0.062	0.250	1.25	5.0	0.051	.	.	.	.	
2	6	M	0.062	0.312	0.31	1.0	.	.	X	.	.	
2	7	M	0.125	0.250	2.50	10.0	0.203	.	.	.	.	
4	8	F	0.000	0.125	0.56	4.5	.	.	.	X	.	
4	9	M	0.062	0.062	0.75	12.0	0.008	.	.	.	.	
5	10	M	0.062	0.250	1.87	7.5	0.076	.	.	.	.	
6	11	M	0.062	0.062	0.94	15.0	0.010	.	.	.	.	
6	12	F	0.000	0.062	1.38	22.0	0.011	.	.	.	.	
6	13	F	0.000	0.062	0.94	15.0	.	0.009	.	.	.	
7	14	F	0.000	0.062	0.81	13.0	.	0.007	.	.	.	
7	15	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
7	16	B	0.062	0.187	1.13	6.0	.	.	X	.	.	
8	17	M	0.062	0.187	0.62	3.3	.	.	X	.	.	
8	18	F	0.000	0.062	3.75	60.0	0.030	.	.	.	.	
8	19	F	0.000	0.062	1.19	19.0	.	.	X	.	.	
9	20	B	0.062	0.250	1.13	4.5	.	.	X	.	.	
9	21	F	0.000	0.125	3.38	27.0	0.108	.	.	.	.	
9	22	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
9	23	M	0.062	0.062	0.37	6.0	0.004	.	.	.	.	
9	24	B	0.062	0.187	1.69	9.0	0.051	.	.	.	.	
9	25	M	0.062	0.062	1.25	20.0	0.013	.	.	.	.	
9	26	F	0.000	0.062	0.37	6.0	.	.	.	X	.	
10	27	F	0.000	0.062	0.69	11.0	.	.	X	.	.	
10	28	C	0.062	0.625	1.25	2.0	.	.	X	.	.	
10	29	C	0.062	1.250	1.87	1.5	.	.	X	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83.

SAMPLE CODE: C06545-53

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
Total Mass (Picogram)=							0.622	0.016				
Total Count =							15.	2.	8.	4.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA :
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-53 TABLE PREPARATION DATE: 25-JUN-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	5.	6994.	237.8	0.08 ± 0.03	2.24 ± 1.27	30.40 ±17.76
	Amphibole	2.	2798.	22.5	0.06 ± 0.00	0.87 ± 0.09	14.00 ± 1.41
	Other	6.	8393.		0.07 ± 0.03	0.74 ± 0.34	11.08 ± 6.15
	All Fiber	13.	18184.		0.07 ± 0.02	1.34 ± 1.07	18.96 ±14.52
Bundle	Chrysotile	1.	1399.	71.9	0.19 ± 0.00	1.69 ± 0.00	9.00 ± 0.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	2.	2798.		0.22 ± 0.04	1.13 ± 0.00	5.25 ± 1.06
	All Bundle	3.	4196.		0.21 ± 0.04	1.31 ± 0.32	6.50 ± 2.29
Cluster	Chrysotile	1.	1399.	24.9	0.12 ± 0.00	0.87 ± 0.00	7.00 ± 0.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	2.	2798.		0.94 ± 0.44	1.56 ± 0.44	1.75 ± 0.35
	All Cluster	3.	4196.		0.67 ± 0.56	1.33 ± 0.51	3.50 ± 3.04
Matrix	Chrysotile	8.	11190.	535.4	0.14 ± 0.09	1.23 ± 0.67	10.38 ± 5.09
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	2.	2798.		0.25 ± 0.09	0.47 ± 0.22	2.17 ± 1.65
	All Matrix	10.	13988.		0.16 ± 0.10	1.08 ± 0.68	8.73 ± 5.70

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 052182
Individual Grid Opening = 0.000071 Sq Cm
Number of Grid Openings = 10
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-64 294

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	2	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	3	C	0.062	0.625	1.25	2.0	.	.	X	.	.	
1	4	F	0.000	0.062	0.94	15.0	.	.	.	X	.	
1	5	C	0.062	0.625	0.75	1.2	.	.	X	.	.	
1	6	C	0.062	0.625	0.94	1.5	.	.	X	.	.	
1	7	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	8	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
1	9	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	10	C	0.062	0.625	1.87	3.0	0.190	.	.	.	.	
1	11	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	12	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	13	M	0.062	0.062	1.31	21.0	0.013	.	.	.	.	
2	14	C	0.062	0.750	2.50	3.3	0.305	.	.	.	.	
2	15	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
2	16	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
2	17	B	0.125	0.625	5.62	9.0	1.143	.	.	.	.	
2	18	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	19	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	20	F	0.000	0.062	0.50	8.0	.	.	X	.	.	
2	21	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
2	22	B	0.125	0.625	2.00	3.2	0.406	.	.	.	.	
2	23	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	24	F	0.000	0.062	1.13	18.0	.	.	X	.	.	
2	25	M	0.062	0.125	0.50	4.0	.	.	X	.	.	
2	26	C	0.062	1.250	1.87	1.5	.	.	X	.	.	
2	27	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
2	28	M	0.062	0.062	0.75	12.0	0.008	.	.	.	.	
2	29	M	0.062	0.062	1.25	20.0	.	.	X	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-64

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
2	30	F	0.000	0.062	2.81	45.0	0.022	.	.	.	.	
3	31	F	0.000	0.062	0.62	10.0	.	0.006	.	.	.	
3	32	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
3	33	C	0.062	0.125	0.69	5.5	.	.	X	.	.	
3	34	C	0.062	0.625	8.44	13.5	0.857	.	.	.	.	
3	35	C	0.062	0.500	2.50	5.0	0.203	.	.	.	.	
3	36	B	0.062	0.125	0.94	7.5	0.019	.	.	.	.	
3	37	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
3	38	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
3	39	F	0.000	0.062	3.25	52.0	0.026	.	.	.	.	
3	40	B	0.125	0.312	13.75	44.0	1.396	.	.	.	.	
3	41	C	0.062	0.375	0.62	1.7	0.038	.	.	.	.	
3	42	F	0.000	0.062	2.25	36.0	0.018	.	.	.	.	
3	43	M	0.062	0.062	2.69	43.0	0.027	.	.	.	.	
3	44	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
3	45	F	0.000	0.062	1.13	18.0	.	.	X	.	.	
3	46	F	0.000	0.062	0.62	10.0	.	.	X	.	.	
3	47	F	0.000	0.062	1.38	22.0	.	.	X	.	.	
3	48	F	0.000	0.062	0.62	10.0	.	.	.	X	.	
3	49	F	0.000	0.062	0.56	9.0	.	.	.	X	.	
3	50	C	0.062	0.187	0.62	3.3	0.019	.	.	.	.	
3	51	C	0.062	0.625	1.25	2.0	0.127	.	.	.	.	
3	52	C	0.062	1.875	2.50	1.3	0.762	.	.	.	.	
3	53	F	0.000	0.062	8.00	128.0	0.064	.	.	.	.	
3	54	C	0.062	2.500	2.81	1.1	.	.	X	.	.	
3	55	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
3	56	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
3	57	C	0.062	0.625	2.50	4.0	0.254	.	.	.	.	
3	58	B	0.062	0.187	2.19	11.7	0.067	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-64

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Asbis	Not Asbe	No Patt	X-Ray
3	59	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
3	60	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
3	61	M	0.062	0.125	1.56	12.5	0.032	.	.	.	.	
3	62	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
3	63	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
3	64	C	0.062	0.125	1.63	13.0	0.033	.	.	.	.	
3	65	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
3	66	C	0.062	0.125	1.87	15.0	0.038	.	.	.	.	
3	67	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
4	68	C	0.062	0.187	0.62	3.3	0.019	.	.	.	.	
4	69	B	0.187	1.250	7.19	5.8	4.380	.	.	.	.	
4	70	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
4	71	C	0.125	2.500	3.12	1.2	2.539	.	.	.	.	
4	72	C	0.062	0.312	2.19	7.0	0.111	.	.	.	.	
4	73	C	0.062	0.625	0.75	1.2	0.076	.	.	.	.	
4	74	C	0.062	1.250	3.75	3.0	.	.	X	.	.	
4	75	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
4	76	F	0.000	0.062	2.06	33.0	0.016	.	.	.	.	
4	77	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
4	78	B	0.062	0.250	3.12	12.5	0.127	.	.	.	.	
4	79	B	0.062	0.625	5.62	9.0	.	.	X	.	.	
4	80	B	0.062	0.375	1.50	4.0	.	.	X	.	.	
4	81	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
4	82	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
4	83	B	0.062	0.625	5.00	8.0	0.508	.	.	.	.	
4	84	C	0.062	0.187	0.62	3.3	0.019	.	.	.	.	
4	85	M	0.062	0.062	0.94	15.0	.	.	X	.	.	
4	86	F	0.000	0.062	1.13	18.0	.	.	X	.	.	
4	87	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-03

SAMPLE CODE: C06545-64

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
4	88	C	0.062	0.625	0.87	1.4	.	.	X	.	.	
4	89	C	0.062	0.625	1.25	2.0	0.127	.	.	.	.	
4	90	C	0.062	0.625	1.87	3.0	0.190	.	.	.	.	
4	91	F	0.000	0.062	3.25	52.0	0.026	.	.	.	.	
4	92	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
4	93	F	0.000	0.062	2.00	32.0	0.016	.	.	.	.	
4	94	F	0.000	0.062	1.63	26.0	0.013	.	.	.	.	
4	95	M	0.062	0.062	1.00	16.0	0.010	.	.	.	.	
4	96	M	0.062	0.062	0.62	10.0	.	.	X	.	.	
4	97	B	0.062	0.625	3.25	5.2	.	.	X	.	.	
4	98	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
4	99	M	0.062	0.125	0.62	5.0	.	.	X	.	.	
4	100	F	0.000	0.062	1.75	28.0	0.014	.	.	.	.	
4	101	B	0.125	0.625	15.00	24.0	3.047	.	.	.	.	
4	102	B	0.062	0.125	2.38	19.0	0.048	.	.	.	.	
4	103	M	0.062	0.187	0.62	3.3	0.019	.	.	.	.	
4	104	F	0.000	0.125	2.50	20.0	0.080	.	.	.	.	
4	105	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
4	106	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
4	107	B	0.187	1.562	10.63	6.8	8.093	.	.	.	.	
4	108	C	0.062	0.625	2.50	4.0	0.254	.	.	.	.	
4	109	M	0.062	0.062	1.25	20.0	0.013	.	.	.	.	
			Total Mass (Picogram)=				26.047	0.006				
			Total Count =				83.	1.	22.	3.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-64 TABLE PREPARATION DATE: 25-JUN-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	46.	159170.	1832.0	0.06 ± 0.01	1.28 ± 1.26	20.04 ±19.88
	Amphibole	1.	3460.	19.9	0.06 ± 0.00	0.62 ± 0.00	10.00 ± 0.00
	Other	9.	31142.		0.06 ± 0.00	0.09 ± 0.32	14.22 ± 5.07
	All Fiber	56.	193772.		0.06 ± 0.01	1.21 ± 1.15	18.93 ±18.25
Bundle	Chrysotile	11.	38062.	66553.8	0.57 ± 0.47	6.16 ± 4.92	13.77 ±11.71
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	3.	10381.		0.54 ± 0.14	3.46 ± 2.07	6.07 ± 2.61
	All Bundle	14.	48443.		0.57 ± 0.41	5.58 ± 4.54	12.12 ±10.83
Cluster	Chrysotile	19.	65744.	21320.7	0.64 ± 0.59	2.07 ± 1.74	4.75 ± 4.29
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	8.	27682.		0.95 ± 0.73	1.62 ± 1.12	2.15 ± 1.48
	All Cluster	27.	93426.		0.73 ± 0.64	1.93 ± 1.57	3.98 ± 3.85
Matrix	Chrysotile	7.	24221.	421.7	0.09 ± 0.05	1.31 ± 0.69	18.26 ±12.40
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	5.	17301.		0.09 ± 0.03	0.79 ± 0.30	10.80 ± 6.76
	All Matrix	12.	41522.		0.09 ± 0.04	1.09 ± 0.60	15.15 ±10.74

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 060883/A-4
Individual Grid Opening = 0.000072 Sq Cm
Number of Grid Openings = 4
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-65 208

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	0.37	6.0	.	0.003	.	.	.	
1	2	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	3	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	4	C	0.062	0.625	1.87	3.0	0.190	.	.	.	.	
1	5	C	0.062	0.187	0.62	3.3	.	.	X	.	.	
1	6	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
1	7	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
1	8	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
1	9	C	0.062	0.187	0.62	3.3	.	.	X	.	.	
1	10	B	0.125	0.500	4.88	9.8	.	.	X	.	.	
1	11	C	0.062	0.125	1.25	10.0	.	.	X	.	.	
1	12	B	0.062	0.250	2.25	9.0	.	.	X	.	.	
1	13	F	0.000	0.125	1.87	15.0	0.060	.	.	.	.	
1	14	F	0.000	0.062	5.31	85.0	0.042	.	.	.	.	
1	15	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	16	B	0.062	0.625	5.00	8.0	0.508	.	.	.	.	
1	17	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	18	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	19	C	0.062	0.250	0.62	2.5	.	.	X	.	.	
1	20	B	0.125	0.250	1.75	7.0	0.142	.	.	.	.	
1	21	B	0.062	0.250	2.50	10.0	.	.	X	.	.	
1	22	C	0.062	0.250	1.00	4.0	0.041	.	.	.	.	
2	23	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
2	24	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	25	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	26	C	0.062	0.187	0.62	3.3	.	.	X	.	.	
2	27	F	0.000	0.125	1.56	12.5	0.050	.	.	.	.	
2	28	C	0.125	1.875	3.12	1.7	1.904	.	.	.	.	
2	29	C	0.062	0.125	0.62	5.0	.	.	X	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-65

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
2	30	F	0.000	0.125	0.87	7.0	0.028	.	.	.	.	
2	31	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
2	32	B	0.062	0.125	4.50	36.0	0.091	.	.	.	.	
3	33	C	0.062	0.250	1.06	4.3	.	.	X	.	.	
3	34	C	0.125	2.500	4.37	1.8	.	.	X	.	.	
3	35	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
3	36	F	0.000	0.062	1.38	22.0	.	.	.	.	X	
3	37	C	0.062	1.875	2.50	1.3	.	.	X	.	.	
3	38	C	0.125	5.000	5.00	1.0	.	.	X	.	.	
3	39	C	0.187	3.437	4.69	1.4	.	.	X	.	.	
3	40	C	0.062	1.250	2.50	2.0	0.508	.	.	.	.	
3	41	C	0.125	0.562	0.81	1.4	.	.	X	.	.	
3	42	B	0.062	1.250	8.12	6.5	1.650	.	.	.	.	
3	43	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
3	44	C	0.125	1.562	2.50	1.6	1.270	.	.	.	.	
3	45	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
3	46	F	0.000	0.125	1.87	15.0	0.060	.	.	.	.	
3	47	F	0.000	0.062	2.56	41.0	0.020	.	.	.	.	
3	48	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
3	49	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
3	50	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
3	51	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
3	52	F	0.000	0.062	1.25	20.0	.	.	.	.	X	
3	53	B	0.062	0.250	2.50	10.0	0.102	.	.	.	.	
3	54	C	0.125	1.875	6.56	3.5	3.999	.	.	.	.	
3	55	M	0.062	0.125	2.38	19.0	0.048	.	.	.	.	
3	56	B	0.062	0.125	0.94	7.5	0.019	.	.	.	.	
3	57	B	0.125	0.500	3.44	6.9	0.559	.	.	.	.	
3	58	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-65

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
3	59	B	0.062	0.187	1.31	7.0	0.040	.	.	.	.	
3	60	C	0.062	0.250	0.56	2.3	.	.	X	.	.	
3	61	C	0.125	0.750	1.87	2.5	0.457	.	.	.	.	
3	62	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	
3	63	C	0.062	0.625	1.75	2.8	0.178	.	.	.	.	
3	64	M	0.125	0.187	1.38	7.3	.	.	X	.	.	
3	65	C	0.062	0.250	0.62	2.5	.	.	X	.	.	
3	66	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
3	67	B	0.062	0.187	1.87	10.0	.	.	X	.	.	
3	68	C	0.062	0.312	2.19	7.0	0.111	.	.	.	.	
3	69	B	0.062	0.187	1.25	6.7	0.038	.	.	.	.	
3	70	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
3	71	B	0.125	1.250	10.63	8.5	4.316	.	.	.	.	
3	72	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
3	73	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
3	74	C	0.062	0.125	0.50	4.0	0.010	.	.	.	.	
3	75	C	0.062	0.250	0.94	3.7	0.038	.	.	.	.	
3	76	C	0.125	2.500	3.75	1.5	.	.	X	.	.	
3	77	M	0.125	0.312	3.75	12.0	0.381	.	.	.	.	
3	78	B	0.062	0.625	4.37	7.0	0.444	.	.	.	.	
3	79	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
3	80	C	0.125	3.125	6.25	2.0	.	.	X	.	.	
3	81	F	0.000	0.125	1.13	9.0	0.036	.	.	.	.	
3	82	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
3	83	B	0.125	1.250	4.69	3.7	1.904	.	.	.	.	
3	84	C	0.062	0.500	0.50	1.0	.	.	X	.	.	
3	85	B	0.125	0.937	4.06	4.3	1.238	.	.	.	.	
3	86	B	0.125	0.937	3.75	4.0	1.143	.	.	.	.	
3	87	B	0.062	0.250	0.75	3.0	0.030	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-65

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
3	88	B	0.062	0.250	9.37	37.5	0.381	.	.	.	.	
3	89	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
3	90	F	0.000	0.062	2.00	32.0	0.016	.	.	.	.	
3	91	M	0.062	0.125	0.62	5.0	.	.	X	.	.	
3	92	B	0.125	0.875	7.50	8.6	2.133	.	.	.	.	
3	93	F	0.000	0.062	1.50	24.0	0.012	.	.	.	.	
3	94	C	0.062	0.937	2.50	2.7	0.381	.	.	.	.	
3	95	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
3	96	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	
3	97	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
3	98	B	0.062	0.187	0.75	4.0	0.023	.	.	.	.	
3	99	C	0.062	0.312	0.94	3.0	0.048	.	.	.	.	
3	100	C	0.125	0.625	2.19	3.5	.	.	X	.	.	
3	101	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
3	102	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
3	103	F	0.000	0.062	2.50	40.0	0.020	.	.	.	.	
3	104	C	0.062	0.500	1.25	2.5	.	.	X	.	.	
			Total Mass (Picogram)=				24.864	0.003				
			Total Count			=	76.	1.	25.	0.	2.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA .
SINGLE SAMPLE SUMMARY TABLES .
SAMPLE CODE: C06545-65 TABLE PREPARATION DATE: 25-JUN-83 .

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	43.	207309.	2600.6	0.07 ± 0.02	1.06 ± 0.87	15.64 ±13.60
	Amphibole	1.	4821.	16.6	0.06 ± 0.00	0.37 ± 0.00	6.00 ± 0.00
	Other	2.	9642.		0.06 ± 0.00	1.31 ± 0.09	21.00 ± 1.41
	All Fiber	46.	221772.		0.07 ± 0.02	1.06 ± 0.84	15.66 ±13.26
Bundle	Chrysotile	18.	86780.	71167.1	0.56 ± 0.42	4.15 ± 3.03	9.79 ± 9.99
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	4.	19285.		0.30 ± 0.14	2.88 ± 1.36	9.69 ± 0.47
	All Bundle	22.	106065.		0.51 ± 0.40	3.92 ± 2.82	9.77 ± 8.99
Cluster	Chrysotile	13.	62675.	44037.6	0.83 ± 0.63	2.17 ± 1.53	3.19 ± 1.40
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	19.	91602.		1.18 ± 1.45	2.00 ± 1.86	2.84 ± 2.06
	All Cluster	32.	154276.		1.04 ± 1.18	2.07 ± 1.71	2.98 ± 1.81
Matrix	Chrysotile	2.	9642.	2068.8	0.22 ± 0.13	3.06 ± 0.97	15.50 ± 4.95
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	2.	9642.		0.16 ± 0.04	1.00 ± 0.53	6.17 ± 1.65
	All Matrix	4.	19285.		0.19 ± 0.09	2.03 ± 1.35	10.83 ± 6.17

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 060883
Individual Grid Opening = 0.000069 Sq Cm
Number of Grid Openings = 3
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-66 302

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
1	2	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
1	3	F	0.000	0.062	2.25	36.0	0.018	.	.	.	.	
1	4	F	0.000	0.250	1.50	6.0	.	.	.	X	.	
1	5	F	0.000	0.062	0.94	15.0	.	.	.	X	.	
1	6	F	0.000	0.062	0.81	13.0	.	.	.	X	.	
1	7	F	0.000	0.125	0.81	6.5	.	.	.	X	.	
1	8	F	0.000	0.062	0.94	15.0	.	.	.	X	.	
1	9	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	10	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	11	B	0.062	0.312	3.25	10.4	0.165	.	.	.	.	
1	12	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
1	13	F	0.000	0.125	0.56	4.5	.	.	X	.	.	
1	14	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	15	C	0.062	0.312	0.75	2.4	.	.	X	.	.	
2	16	C	0.187	1.250	2.50	2.0	1.523	.	.	.	.	
2	17	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
2	18	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	19	C	0.062	0.875	2.63	3.0	0.373	.	.	.	.	
2	20	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
2	21	C	0.062	0.312	0.62	2.0	0.032	.	.	.	.	
2	22	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
2	23	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
2	24	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
2	25	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
2	26	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	27	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
2	28	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
3	29	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-66

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
3	30	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
3	31	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
3	32	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
3	33	C	0.062	0.375	0.50	1.3	0.030	.	.	.	.	
3	34	F	0.000	0.062	1.00	16.0	.	0.009	.	.	.	
3	35	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
3	36	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
3	37	F	0.000	0.125	1.25	10.0	0.040	.	.	.	.	
3	38	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
4	39	F	0.000	0.062	0.25	4.0	.	.	X	.	.	
4	40	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
4	41	B	0.062	0.312	19.69	63.0	1.000	.	.	.	.	
4	42	C	0.125	0.750	1.38	1.8	0.335	.	.	.	.	
4	43	B	0.125	0.312	2.50	8.0	0.254	.	.	.	.	
4	44	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
4	45	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
4	46	C	0.062	0.625	0.87	1.4	0.089	.	.	.	.	
4	47	C	0.062	1.250	2.81	2.3	0.571	.	.	.	.	
4	48	B	0.062	0.125	1.25	10.0	0.025	.	.	.	.	
4	49	B	0.062	0.125	1.56	12.5	0.032	.	.	.	.	
4	50	B	0.125	0.625	4.37	7.0	0.889	.	.	.	.	
4	51	B	0.062	0.125	2.19	17.5	0.044	.	.	.	.	
4	52	C	0.125	1.875	3.75	2.0	2.285	.	.	.	.	
4	53	C	0.187	4.375	8.75	2.0	.	.	X	.	.	
4	54	C	0.125	2.500	6.25	2.5	5.078	.	.	.	.	
4	55	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
4	56	B	0.125	0.250	10.00	40.0	0.812	.	.	.	.	
4	57	B	0.062	0.187	1.56	8.3	0.048	.	.	.	.	
4	58	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA

INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)

TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-66

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
4	59	F	0.000	0.125	0.87	7.0	0.028	.	.	.	.	
4	60	B	0.062	0.187	1.25	6.7	0.038	.	.	.	.	
4	61	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
5	62	C	0.062	0.625	0.94	1.5	.	.	X	.	.	
5	63	C	0.062	0.250	0.62	2.5	.	.	X	.	.	
5	64	M	0.062	0.062	0.56	9.0	0.006	.	.	.	.	
5	65	B	0.125	0.312	3.75	12.0	.	.	X	.	.	
5	66	C	0.125	0.937	1.25	1.3	0.381	.	.	.	.	
6	67	C	0.062	0.375	1.87	5.0	0.114	.	.	.	.	
6	68	F	0.000	0.062	3.81	61.0	0.030	.	.	.	.	
6	69	C	0.062	0.625	1.87	3.0	0.190	.	.	.	.	
6	70	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
6	71	F	0.000	0.062	0.50	8.0	.	.	.	X	.	
6	72	F	0.000	0.062	0.62	10.0	.	.	.	X	.	
6	73	C	0.062	0.250	0.75	3.0	.	.	X	.	.	
7	74	C	0.062	0.625	4.37	7.0	0.444	.	.	.	.	
7	75	C	0.062	0.312	0.50	1.6	0.025	.	.	.	.	
7	76	C	0.062	0.500	0.94	1.9	0.076	.	.	.	.	
7	77	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
7	78	F	0.000	0.062	0.62	10.0	.	.	X	.	.	
7	79	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
7	80	F	0.000	0.062	1.38	22.0	0.011	.	.	.	.	
7	81	M	0.062	0.062	0.50	8.0	0.005	.	.	.	.	
7	82	C	0.062	0.625	1.56	2.5	.	.	X	.	.	
7	83	C	0.187	1.375	4.37	3.2	.	.	X	.	.	
7	84	C	0.062	0.625	3.12	5.0	.	.	X	.	.	
8	85	F	0.000	0.062	2.50	40.0	0.020	.	.	.	.	
8	86	C	0.062	0.625	1.25	2.0	.	.	X	.	.	
8	87	C	0.062	0.625	1.50	2.4	0.152	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-66

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
8	88	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
8	89	C	0.062	0.312	1.25	4.0	0.063	.	.	.	.	
8	90	F	0.000	0.062	1.94	31.0	0.015	.	.	.	.	
8	91	F	0.000	0.062	0.56	9.0	.	.	.	X	.	
8	92	F	0.000	0.062	0.31	5.0	.	.	.	X	.	
8	93	F	0.000	0.062	1.63	26.0	0.013	.	.	.	.	
8	94	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
8	95	C	0.187	2.500	3.75	1.5	.	.	X	.	.	
8	96	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
8	97	C	0.125	0.312	0.87	2.8	0.089	.	.	.	.	
8	98	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
8	99	F	0.000	0.062	1.75	28.0	0.014	.	.	.	.	
8	100	C	0.125	1.250	3.12	2.5	.	.	X	.	.	
8	101	C	0.125	0.375	1.87	5.0	.	.	X	.	.	
8	102	C	0.125	2.500	3.12	1.2	.	.	X	.	.	
8	103	F	0.000	0.062	1.31	21.0	0.010	.	.	.	.	
8	104	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
8	105	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
			Total Mass (Picogram)=				15.560	0.009				
			Total Count =				78.	1.	17.	9.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA:
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-66 TABLE PREPARATION DATE: 25-JUN-83

Aerosol Object Count And Calculated Object Mass Characteristics:

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	48.	82463.	668.0	0.07 ± 0.01	0.88 ± 0.66	13.77 ±10.56
	Amphibole	1.	1718.	15.8	0.06 ± 0.00	1.00 ± 0.00	16.00 ± 0.00
	Other	12.	20616.		0.09 ± 0.06	0.70 ± 0.33	8.83 ± 3.90
	All Fiber	61.	104797.		0.07 ± 0.03	0.85 ± 0.60	12.84 ± 9.71
Bundle	Chrysotile	10.	17180.	5681.6	0.26 ± 0.15	4.76 ± 5.86	18.34 ±18.57
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	1.	1718.		0.31 ± 0.00	3.75 ± 0.00	12.00 ± 0.00
	All Bundle	11.	18898.		0.26 ± 0.14	4.67 ± 5.57	17.76 ±17.72
Cluster	Chrysotile	18.	30924.	20364.2	0.80 ± 0.59	1.99 ± 1.53	2.63 ± 1.44
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	13.	22334.		1.21 ± 1.23	2.62 ± 2.24	2.64 ± 1.19
	All Cluster	31.	53257.		0.97 ± 0.92	2.25 ± 1.85	2.63 ± 1.32
Matrix	Chrysotile	2.	3436.	18.5	0.06 ± 0.00	0.53 ± 0.04	8.50 ± 0.71
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	0.	0.		0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	All Matrix	2.	3436.		0.06 ± 0.00	0.53 ± 0.04	8.50 ± 0.71

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 060883/B-1
Individual Grid Opening = 0.000073 Sq Cm
Number of Grid Openings = 8
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA .
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83.

SAMPLE CODE: C06545-67 306

Grd			Size (Micron)				Mass (Picogram)					
Opn	Obj	Str	Depth	Width	Length	Ratio	Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.125	0.62	5.0	0.020	.	.	.	.	
1	2	C	0.062	0.625	0.94	1.5	0.095	.	.	.	.	
1	3	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	4	B	0.062	0.187	5.00	26.7	0.152	.	.	.	.	
1	5	C	0.062	0.625	1.87	3.0	.	.	X	.	.	
1	6	B	0.125	0.312	2.50	8.0	.	.	X	.	.	
1	7	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
1	8	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	9	C	0.062	1.250	1.25	1.0	.	.	X	.	.	
1	10	C	0.062	0.187	0.37	2.0	0.011	.	.	.	.	
1	11	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
1	12	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
1	13	F	0.000	0.062	2.19	35.0	0.017	.	.	.	.	
1	14	B	0.125	1.250	4.37	3.5	1.777	.	.	.	.	
1	15	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
1	16	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
1	17	F	0.000	0.062	0.31	5.0	.	.	.	.	X	
1	18	C	0.062	0.125	1.25	10.0	0.025	.	.	.	.	
1	19	F	0.000	0.062	2.00	32.0	0.016	.	.	.	.	
1	20	B	0.062	0.250	3.44	13.8	.	.	X	.	.	
1	21	M	0.062	0.062	2.50	40.0	0.025	.	.	.	.	
1	22	C	0.062	0.625	2.81	4.5	.	.	X	.	.	
1	23	C	0.125	3.125	5.62	1.8	.	.	X	.	.	
1	24	C	0.062	0.500	1.25	2.5	0.102	.	.	.	.	
1	25	B	0.062	0.187	1.63	8.7	0.050	.	.	.	.	
1	26	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	27	F	0.000	0.062	0.75	12.0	.	.	.	X	.	
1	28	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	29	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-03

SAMPLE CODE: C06545-67

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Fatt	X-Ray
1	30	F	0.000	0.125	2.56	20.5	0.082	.	.	.	.	
1	31	F	0.000	0.125	1.50	12.0	0.048	.	.	.	.	
1	32	C	0.062	0.625	1.25	2.0	.	.	X	.	.	
1	33	M	0.062	0.062	0.69	11.0	0.007	.	.	.	.	
1	34	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	35	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	36	C	0.062	0.187	1.87	10.0	0.057	.	.	.	.	
2	37	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
2	38	F	0.000	0.062	1.06	17.0	0.008	.	.	.	.	
2	39	F	0.000	0.062	1.56	25.0	0.012	.	.	.	.	
2	40	C	0.062	0.250	0.62	2.5	.	.	X	.	.	
2	41	F	0.000	0.062	3.75	60.0	0.030	.	.	.	.	
2	42	C	0.062	0.187	1.69	9.0	0.051	.	.	.	.	
2	43	C	0.062	0.125	0.62	5.0	.	.	X	.	.	
2	44	C	0.062	0.250	0.62	2.5	.	.	X	.	.	
2	45	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	46	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
2	47	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
2	48	B	0.062	0.125	1.06	8.5	0.022	.	.	.	.	
2	49	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
2	50	C	0.062	0.312	0.62	2.0	0.032	.	.	.	.	
2	51	F	0.000	0.062	0.56	9.0	.	.	.	X	.	
2	52	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
2	53	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
2	54	C	0.125	1.875	1.87	1.0	.	.	X	.	.	
2	55	C	0.125	1.250	1.87	1.5	.	.	X	.	.	
2	56	C	0.125	0.625	1.87	3.0	.	.	X	.	.	
2	57	B	0.062	0.125	1.87	15.0	0.038	.	.	.	.	
2	58	C	0.125	1.250	2.19	1.8	.	.	X	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-67

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
2	59	B	0.062	0.125	0.94	7.5	.	.	X	.	.	
2	60	F	0.000	0.062	0.50	8.0	.	.	X	.	.	
2	61	F	0.000	0.062	0.31	5.0	.	.	X	.	.	
2	62	F	0.000	0.062	0.94	15.0	.	.	X	.	.	
2	63	F	0.000	0.125	1.25	10.0	0.040	.	.	.	.	
2	64	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	65	C	0.187	1.250	4.37	3.5	.	.	X	.	.	
2	66	F	0.000	0.125	1.19	9.5	.	.	.	X	.	
2	67	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	68	B	0.062	0.250	1.38	5.5	.	.	X	.	.	
2	69	F	0.000	0.062	1.75	28.0	0.014	.	.	.	.	
2	70	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
2	71	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
2	72	C	0.062	1.250	3.12	2.5	.	.	X	.	.	
2	73	C	0.062	0.125	1.13	9.0	.	.	X	.	.	
3	74	F	0.000	0.187	0.87	4.7	.	.	.	X	.	
3	75	C	0.062	0.125	1.25	10.0	0.025	.	.	.	.	
3	76	C	0.187	1.562	1.87	1.2	1.428	.	.	.	.	
3	77	C	0.062	0.375	0.69	1.8	.	.	X	.	.	
3	78	C	0.125	1.250	1.87	1.5	0.762	.	.	.	.	
3	79	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
3	80	C	0.062	0.125	0.50	4.0	.	.	X	.	.	
3	81	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
3	82	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
3	83	F	0.000	0.062	1.63	26.0	0.013	.	.	.	.	
3	84	C	0.062	0.375	1.25	3.3	.	.	X	.	.	
3	85	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
3	86	B	0.062	0.312	2.00	6.4	0.102	.	.	.	.	
4	87	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-67

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
4	88	C	0.062	0.125	0.44	3.5	.	.	X	.	.	
4	89	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
4	90	F	0.000	0.062	1.06	17.0	0.008	.	.	.	.	
4	91	B	0.062	0.625	3.75	6.0	0.381	.	.	.	.	
4	92	C	0.062	0.625	1.25	2.0	.	.	X	.	.	
4	93	C	0.062	0.125	0.50	4.0	.	.	X	.	.	
4	94	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
4	95	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
4	96	B	0.062	0.125	0.62	5.0	0.013	.	.	.	.	
4	97	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
4	98	C	0.062	0.125	0.62	5.0	.	.	X	.	.	
4	99	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
4	100	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
4	101	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
4	102	F	0.000	0.062	0.25	4.0	.	.	X	.	.	
4	103	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
4	104	C	0.062	0.125	0.81	6.5	.	.	X	.	.	
4	105	C	0.062	0.625	0.94	1.5	.	.	X	.	.	
4	106	B	0.062	0.250	1.63	6.5	.	.	X	.	.	
4	107	F	0.000	0.062	1.50	24.0	0.012	.	.	.	.	
4	108	B	0.125	0.187	2.94	15.7	.	.	X	.	.	
4	109	B	0.187	0.625	5.00	8.0	1.523	.	.	.	.	
4	110	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
4	111	C	0.062	0.187	0.75	4.0	0.023	.	.	.	.	
4	112	C	0.125	1.250	2.19	1.8	.	.	X	.	.	
4	113	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
4	114	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
			Total Mass (Picogram)=				7.246	0.000				
			Total Count			=	74.	0.	35.	4.	1.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-67 TABLE PREPARATION DATE: 25-JUN-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	52.	175510.	1837.5	0.07 ± 0.02	0.97 ± 0.67	14.61 ±10.14
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	9.	30377.		0.08 ± 0.04	0.63 ± 0.33	8.02 ± 3.76
	All Fiber	61.	205886.		0.07 ± 0.02	0.92 ± 0.64	13.63 ± 9.74
Bundle	Chrysotile	9.	30377.	13694.6	0.40 ± 0.38	2.81 ± 1.72	9.75 ± 7.13
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	6.	20251.		0.23 ± 0.06	2.14 ± 0.97	9.49 ± 4.18
	All Bundle	15.	50628.		0.33 ± 0.30	2.54 ± 1.47	9.64 ± 5.94
Cluster	Chrysotile	11.	37127.	8816.2	0.48 ± 0.49	1.25 ± 0.54	4.88 ± 3.94
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	25.	84380.		0.74 ± 0.71	1.61 ± 1.27	3.12 ± 1.85
	All Cluster	36.	121507.		0.66 ± 0.65	1.50 ± 1.11	3.66 ± 2.73
Matrix	Chrysotile	2.	6750.	109.3	0.06 ± 0.00	1.59 ± 1.28	25.50 ±20.51
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	0.	0.		0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	All Matrix	2.	6750.		0.06 ± 0.00	1.59 ± 1.28	25.50 ±20.51

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 060883/B-2
Individual Grid Opening = 0.000074 Sq Cm
Number of Grid Openings = 4
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 21-JUL-83

SAMPLE CODE: C06545-69 7/4 314 Grind Brakes

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	C	0.062	0.250	1.13	4.5	0.046	.	.	.	.	
1	2	M	0.062	0.937	0.94	1.0	.	.	X	.	.	
1	3	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	4	C	0.062	0.500	0.62	1.2	.	.	X	.	.	
1	5	C	0.062	0.250	0.62	2.5	.	.	X	.	.	
2	6	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
2	7	C	0.062	0.500	1.56	3.1	0.127	.	.	.	.	
2	8	C	0.125	1.250	3.12	2.5	1.270	.	.	.	.	
2	9	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
2	10	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
2	11	C	0.062	0.187	1.38	7.3	0.042	.	.	.	.	
2	12	C	0.125	3.750	5.00	1.3	.	.	X	.	.	
2	13	C	0.062	0.187	1.25	6.7	.	.	X	.	.	
2	14	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
2	15	F	0.000	0.062	1.31	21.0	0.010	.	.	.	.	
2	16	F	0.000	0.062	1.81	29.0	0.014	.	.	.	.	
2	17	C	0.062	0.375	0.62	1.7	0.038	.	.	.	.	
2	18	C	0.062	0.125	1.50	12.0	0.030	.	.	.	.	
2	19	F	0.000	0.125	2.63	21.0	0.084	.	.	.	.	
2	20	B	0.187	1.562	6.87	4.4	5.237	.	.	.	.	
2	21	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
2	22	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	
2	23	F	0.000	0.062	0.56	9.0	.	0.005	.	.	.	
2	24	C	0.062	0.187	0.75	4.0	0.023	.	.	.	.	
2	25	B	0.062	0.125	1.00	8.0	0.020	.	.	.	.	
2	26	F	0.000	0.125	1.31	10.5	.	0.048	.	.	.	
2	27	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
2	28	B	0.062	0.125	1.75	14.0	0.036	.	.	.	.	
2	29	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 21-JUL-83

SAMPLE CODE: C06545-69

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
3	30	B	0.062	0.125	0.87	7.0	0.018	.	.	.	.	
3	31	C	0.125	2.500	3.75	1.5	3.047	.	.	.	.	
3	32	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
3	33	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
3	34	B	0.062	0.125	1.25	10.0	0.025	.	.	.	.	
3	35	B	0.062	0.125	0.56	4.5	0.011	.	.	.	.	
3	36	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
3	37	C	0.125	0.625	1.87	3.0	.	.	X	.	.	
3	38	B	0.125	0.437	1.50	3.4	.	.	X	.	.	
3	39	C	0.062	0.625	2.19	3.5	0.222	.	.	.	.	
3	40	F	0.000	0.062	5.00	80.0	0.040	.	.	.	.	
3	41	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
4	42	C	0.062	0.625	1.56	2.5	.	.	X	.	.	
4	43	C	0.062	0.250	2.50	10.0	0.102	.	.	.	.	
4	44	F	0.000	0.062	2.00	32.0	0.016	.	.	.	.	
4	45	F	0.000	0.062	3.88	62.0	0.031	.	.	.	.	
4	46	F	0.000	0.062	0.75	12.0	.	.	X	.	.	
4	47	C	0.125	0.625	1.56	2.5	.	.	X	.	.	
4	48	C	0.125	0.625	2.50	4.0	.	.	X	.	.	
4	49	F	0.000	0.062	2.00	32.0	0.016	.	.	.	.	
4	50	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	
4	51	C	0.062	0.625	2.19	3.5	.	.	X	.	.	
4	52	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
4	53	B	0.062	0.187	3.12	16.7	0.095	.	.	.	.	
4	54	C	0.062	0.750	2.50	3.3	.	.	X	.	.	
4	55	F	0.000	0.062	1.56	25.0	0.012	.	.	.	.	
4	56	C	0.125	0.625	4.69	7.5	0.952	.	.	.	.	
4	57	C	0.062	0.250	0.62	2.5	0.025	.	.	.	.	
4	58	B	0.062	0.187	1.87	10.0	0.057	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 21-JUL-83

SAMPLE CODE: C06545-69

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
4	59	B	0.062	0.125	1.87	15.0	0.038	.	.	.	.	
4	60	B	0.187	1.125	3.12	2.8	.	.	X	.	.	
4	61	F	0.000	0.125	2.56	20.5	0.082	.	.	.	.	
4	62	C	0.125	0.625	2.50	4.0	.	.	X	.	.	
4	63	C	0.062	0.375	0.87	2.3	.	.	.	.	.	
4	64	B	0.187	0.625	13.13	21.0	3.999	.	.	.	.	
4	65	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
4	66	C	0.062	0.187	1.87	10.0	.	.	X	.	.	
4	67	C	0.062	0.625	2.19	3.5	0.222	.	.	.	.	
4	68	C	0.062	0.625	3.12	5.0	.	.	X	.	.	
4	69	C	0.062	0.625	0.62	1.0	.	.	X	.	.	
4	70	F	0.000	0.062	0.87	14.0	0.007	.	.	.	.	
4	71	C	0.062	0.312	1.87	6.0	.	.	X	.	.	
4	72	C	0.125	1.250	2.50	2.0	1.016	.	.	.	.	
5	73	C	0.062	0.750	1.00	1.3	.	.	X	.	.	
5	74	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
5	75	C	0.062	0.187	0.94	5.0	0.029	.	.	.	.	
5	76	M	0.062	0.062	1.06	17.0	0.011	.	.	.	.	
6	77	C	0.187	0.625	1.56	2.5	.	.	X	.	.	
6	78	C	0.125	0.312	1.25	4.0	.	.	X	.	.	
6	79	F	0.000	0.125	1.25	10.0	0.040	.	.	.	.	
6	80	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
6	81	F	0.000	0.062	0.25	4.0	.	.	X	.	.	
6	82	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
6	83	F	0.000	0.062	1.31	21.0	0.010	.	.	.	.	
6	84	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
6	85	C	0.125	1.875	6.87	3.7	4.189	.	.	.	.	
6	86	F	0.000	0.062	3.38	54.0	0.027	.	.	.	.	
7	87	B	0.125	0.250	3.88	15.5	0.315	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 21-JUL-83

SAMPLE CODE: C06545-69

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
7	88	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
7	89	C	0.125	0.625	1.87	3.0	0.381	.	.	.	.	
7	90	F	0.000	0.062	1.63	26.0	0.013	.	.	.	.	
7	91	C	0.062	0.750	2.50	3.3	.	.	X	.	.	
7	92	C	0.187	2.500	6.25	2.5	.	.	X	.	.	
7	93	F	0.000	0.125	2.06	16.5	0.066	.	.	.	.	
7	94	B	0.062	0.125	3.88	31.0	0.079	.	.	.	.	
7	95	B	0.062	0.187	1.19	6.3	0.036	.	.	.	.	
7	96	F	0.000	0.062	1.56	25.0	0.012	.	.	.	.	
8	97	F	0.000	0.062	2.19	35.0	0.017	.	.	.	.	
8	98	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
8	99	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
8	100	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
8	101	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
8	102	F	0.000	0.062	0.69	11.0	.	0.006	.	.	.	
8	103	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
8	104	F	0.000	0.062	1.44	23.0	0.011	.	.	.	.	
8	105	F	0.000	0.062	2.25	36.0	0.018	.	.	.	.	
8	106	F	0.000	0.062	0.37	6.0	.	.	.	X	.	
8	107	F	0.000	0.062	1.63	26.0	0.013	.	.	.	.	
8	108	C	0.062	0.125	0.62	5.0	.	.	X	.	.	
8	109	F	0.000	0.062	1.50	24.0	0.012	.	.	.	.	
8	110	C	0.125	1.250	2.19	1.8	.	.	X	.	.	
8	111	C	0.062	0.125	0.62	5.0	0.013	.	.	.	.	
8	112	F	0.000	0.125	0.94	7.5	0.030	.	.	.	.	
8	113	F	0.000	0.062	2.25	36.0	0.018	.	.	.	.	
			Total Mass (Picogram)=				22.510	0.060				
			Total Count =				81.	3.	28.	1.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA :
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-69 TABLE PREPARATION DATE: 21-JUL-83 :

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	47.	81893.	1302.1	0.07 ± 0.02	1.39 ± 0.94	20.65 ±14.64
	Amphibole	3.	5227.	104.2	0.08 ± 0.04	0.85 ± 0.40	10.17 ± 1.04
	Other	3.	5227.		0.06 ± 0.00	0.46 ± 0.26	7.33 ± 4.16
	All Fiber	53.	92347.		0.07 ± 0.02	1.31 ± 0.93	19.30 ±14.32
Bundle	Chrysotile	13.	22651.	17365.6	0.30 ± 0.40	3.17 ± 3.46	12.57 ± 7.53
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	2.	3485.		0.78 ± 0.49	2.31 ± 1.15	3.10 ± 0.46
	All Bundle	15.	26136.		0.36 ± 0.43	3.06 ± 3.23	11.31 ± 7.73
Cluster	Chrysotile	18.	31363.	20513.3	0.66 ± 0.66	2.16 ± 1.63	4.57 ± 2.89
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	23.	40075.		0.77 ± 0.81	2.00 ± 1.36	3.45 ± 2.07
	All Cluster	41.	71439.		0.72 ± 0.74	2.07 ± 1.47	3.94 ± 2.50
Matrix	Chrysotile	3.	5227.	40.9	0.06 ± 0.00	0.77 ± 0.25	12.33 ± 4.04
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	1.	1742.		0.94 ± 0.00	0.94 ± 0.00	1.00 ± 0.00
	All Matrix	4.	6970.		0.28 ± 0.44	0.81 ± 0.22	9.50 ± 6.56

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 060883/B-4
Individual Grid Openings = 0.000072 Sq Cm
Number of Grid Openings = 8
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-70 318

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Lensth	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	C	0.062	0.187	1.25	6.7	.	.	X	.	.	
1	2	F	0.000	0.062	7.75	124.0	0.062	.	.	.	.	
1	3	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
1	4	C	0.125	3.125	3.75	1.2	.	.	X	.	.	
1	5	C	0.062	0.625	1.25	2.0	0.127	.	.	.	.	
1	6	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
1	7	F	0.000	0.062	0.94	15.0	.	.	X	.	.	
1	8	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
1	9	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
2	10	C	0.062	0.625	1.25	2.0	.	.	X	.	.	
2	11	B	0.125	1.250	6.56	5.3	2.666	.	.	.	.	
2	12	C	0.125	3.125	4.37	1.4	.	.	X	.	.	
2	13	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
2	14	F	0.000	0.062	2.31	37.0	0.018	.	.	.	.	
2	15	C	0.062	0.500	0.62	1.2	.	.	X	.	.	
2	16	C	0.062	0.500	0.62	1.2	0.051	.	.	.	.	
2	17	C	0.062	0.125	1.25	10.0	0.025	.	.	.	.	
2	18	C	0.062	1.500	1.87	1.2	.	.	X	.	.	
2	19	C	0.062	0.437	2.50	5.7	.	.	X	.	.	
2	20	C	0.187	2.500	7.81	3.1	.	.	X	.	.	
3	21	C	0.062	0.625	0.62	1.0	.	.	X	.	.	
3	22	C	0.062	1.250	1.56	1.2	.	.	X	.	.	
3	23	C	0.062	0.375	0.75	2.0	0.046	.	.	.	.	
3	24	C	0.125	1.250	2.19	1.8	.	.	X	.	.	
3	25	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
3	26	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
3	27	B	0.125	0.250	3.88	15.5	.	.	X	.	.	
3	28	C	0.125	1.875	3.12	1.7	.	.	X	.	.	
3	29	B	0.062	0.500	3.50	7.0	0.284	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA :
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-70

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
3	30	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
3	31	C	0.125	2.187	3.12	1.4	2.222	.	.	.	.	
3	32	F	0.000	0.062	2.38	38.0	0.019	.	.	.	.	
3	33	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
3	34	C	0.062	0.250	0.94	3.7	.	.	X	.	.	
3	35	C	0.062	0.375	1.25	3.3	0.076	.	.	.	.	
3	36	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
4	37	F	0.000	0.062	1.56	25.0	0.012	.	.	.	.	
4	38	C	0.062	0.500	1.69	3.4	.	.	X	.	.	
4	39	F	0.000	0.062	2.13	34.0	0.017	.	.	.	.	
4	40	C	0.062	0.625	2.19	3.5	.	.	X	.	.	
4	41	C	0.125	2.500	3.12	1.2	.	.	X	.	.	
4	42	B	0.125	0.250	10.94	43.7	.	.	X	.	.	
4	43	C	0.125	0.937	2.19	2.3	.	.	X	.	.	
4	44	C	0.187	3.125	4.37	1.4	.	.	X	.	.	
4	45	B	0.125	0.500	8.12	16.3	.	.	X	.	.	
4	46	B	0.125	0.187	3.75	20.0	.	.	X	.	.	
4	47	C	0.125	0.625	3.12	5.0	0.635	.	.	.	.	
4	48	F	0.000	0.062	1.50	24.0	0.012	.	.	.	.	
4	49	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
4	50	F	0.000	0.062	0.25	4.0	0.002	.	.	.	.	
4	51	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
4	52	C	0.062	0.625	4.37	7.0	0.444	.	.	.	.	
5	53	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
5	54	B	0.125	0.625	6.87	11.0	1.396	.	.	.	.	
5	55	F	0.000	0.062	4.69	75.0	0.037	.	.	.	.	
5	56	C	0.062	0.750	3.12	4.2	.	.	X	.	.	
5	57	C	0.125	1.250	2.50	2.0	1.016	.	.	.	.	
5	58	F	0.000	0.062	2.38	38.0	0.019	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA :
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83 :

SAMPLE CODE: C06545-70

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
5	59	C	0.062	0.937	1.56	1.7	0.238	.	.	.	.	
5	60	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
5	61	B	0.062	0.500	11.88	23.8	0.965	.	.	.	.	
5	62	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
5	63	M	0.062	0.062	1.25	20.0	0.013	.	.	.	.	
5	64	C	0.187	1.875	2.50	1.3	.	.	X	.	.	
5	65	C	0.125	1.250	3.75	3.0	.	.	X	.	.	
5	66	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
6	67	B	0.187	0.625	5.00	8.0	1.523	.	.	.	.	
6	68	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
6	69	B	0.062	0.625	7.50	12.0	0.762	.	.	.	.	
6	70	B	0.187	0.937	17.50	18.7	7.998	.	.	.	.	
6	71	C	0.125	1.250	3.44	2.8	1.396	.	.	.	.	
6	72	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
7	73	C	0.062	0.187	3.12	16.7	0.095	.	.	.	.	
7	74	F	0.000	0.062	0.62	10.0	.	.	.	X	.	
7	75	F	0.000	0.062	0.37	6.0	.	.	.	X	.	
7	76	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
7	77	F	0.000	0.062	0.87	14.0	.	.	X	.	.	
8	78	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
8	79	F	0.000	0.062	1.06	17.0	0.008	.	.	.	.	
8	80	F	0.000	0.062	0.31	5.0	.	.	.	X	.	
8	81	C	0.062	0.250	1.38	5.5	.	.	X	.	.	
8	82	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
8	83	F	0.000	0.062	0.62	10.0	.	.	.	.	X	
8	84	F	0.000	0.062	0.69	11.0	0.005	.	.	.	.	
8	85	C	0.125	2.500	3.75	1.5	3.047	.	.	.	.	
8	86	B	0.125	0.625	4.37	7.0	0.889	.	.	.	.	
8	87	C	0.062	0.625	0.62	1.0	.	.	X	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 25-JUN-83

SAMPLE CODE: C06545-70

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
8	88	C	0.062	0.125	0.50	4.0	.	.	X	.	.	
8	89	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
8	90	F	0.000	0.062	1.75	28.0	0.014	.	.	.	.	
8	91	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
8	92	F	0.000	0.125	1.00	8.0	0.032	.	.	.	.	
8	93	C	0.062	0.125	0.50	4.0	0.010	.	.	.	.	
8	94	B	0.062	0.250	0.75	3.0	0.030	.	.	.	.	
8	95	B	0.062	0.625	9.06	14.5	0.920	.	.	.	.	
9	96	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
9	97	C	0.125	3.750	7.50	2.0	9.141	.	.	.	.	
9	98	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
9	99	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
9	100	C	0.062	0.812	1.25	1.5	.	.	X	.	.	
9	101	B	0.187	1.875	10.00	5.3	9.141	.	.	.	.	
9	102	B	0.062	0.125	2.50	20.0	0.051	.	.	.	.	
9	103	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
9	104	C	0.062	0.625	1.87	3.0	0.190	.	.	.	.	
9	105	M	0.062	0.062	0.94	15.0	.	.	X	.	.	
9	106	M	0.062	0.062	0.75	12.0	0.008	.	.	.	.	
9	107	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
9	108	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
9	109	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
9	110	C	0.062	0.625	1.87	3.0	0.190	.	.	.	.	
9	111	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
9	112	C	0.062	0.187	1.87	10.0	0.057	.	.	.	.	
9	113	F	0.000	0.062	1.75	28.0	0.014	.	.	.	.	
			Total Mass (Picogram)=				46.082	0.000				
			Total Count			=	77.	0.	32.	3.	1.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-70 TABLE PREPARATION DATE: 25-JUN-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picograms Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	44.	70162.	674.1	0.06 ± 0.01	1.14 ± 1.31	18.00 ±20.97
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	6.	9568.		0.06 ± 0.00	0.62 ± 0.25	10.00 ± 4.05
	All Fiber	50.	79730.		0.06 ± 0.01	1.08 ± 1.24	17.04 ±19.86
Bundle	Chrysotile	12.	19135.	42457.4	0.71 ± 0.47	7.13 ± 4.57	11.29 ± 6.64
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	4.	6378.		0.30 ± 0.14	6.67 ± 3.50	23.88 ±13.40
	All Bundle	16.	25513.		0.61 ± 0.44	7.01 ± 4.22	14.44 ± 9.99
Cluster	Chrysotile	18.	28703.	30308.1	0.94 ± 0.97	2.43 ± 1.70	4.37 ± 4.10
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	25.	39865.		1.23 ± 0.97	2.34 ± 1.63	2.58 ± 1.64
	All Cluster	43.	68567.		1.10 ± 0.97	2.38 ± 1.64	3.33 ± 3.02
Matrix	Chrysotile	3.	4784.	42.5	0.06 ± 0.00	0.87 ± 0.33	14.00 ± 5.29
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	1.	1595.		0.06 ± 0.00	0.94 ± 0.00	15.00 ± 0.00
	All Matrix	4.	6378.		0.06 ± 0.00	0.89 ± 0.27	14.25 ± 4.35

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 060883/B-5
Individual Grid Opening = 0.000070 Sq Cm
Number of Grid Openings = 9
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 21-JUL-83

SAMPLE CODE: C06545-71 32~

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	B	0.062	1.562	11.25	7.2	2.856	.	.	.	.	
1	2	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	3	F	0.000	0.062	0.31	5.0	.	.	.	X	.	
1	4	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	5	M	0.062	0.625	1.87	3.0	.	.	X	.	.	
1	6	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
1	7	F	0.000	0.062	1.87	30.0	0.015	.	.	.	.	
1	8	F	0.000	0.062	1.69	27.0	0.013	.	.	.	.	
1	9	C	0.062	0.375	0.50	1.3	0.030	.	.	.	.	
1	10	C	0.125	0.312	1.56	5.0	.	.	X	.	.	
1	11	B	0.125	0.375	3.75	10.0	0.457	.	.	.	.	
1	12	F	0.000	0.125	5.13	41.0	0.164	.	.	.	.	
1	13	F	0.000	0.062	14.38	230.0	0.115	.	.	.	.	
1	14	C	0.187	0.812	1.87	2.3	.	.	X	.	.	
1	15	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	16	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
1	17	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
1	18	B	0.062	0.125	3.00	24.0	0.061	.	.	.	.	
1	19	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
2	20	F	0.000	0.062	0.62	10.0	.	.	.	X	.	
2	21	F	0.000	0.062	0.56	9.0	.	.	.	X	.	
2	22	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
2	23	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
3	24	M	0.062	0.062	0.50	8.0	.	.	X	.	.	
4	25	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
4	26	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
4	27	F	0.000	0.062	0.31	5.0	.	.	X	.	.	
4	28	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
4	29	F	0.000	0.062	1.19	19.0	0.009	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 21-JUL-83

SAMPLE CODE: C06545-71

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
4	30	F	0.000	0.187	1.94	10.3	0.139	.	.	.	.	
4	31	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
4	32	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
4	33	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
4	34	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
4	35	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
4	36	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
4	37	F	0.000	0.062	2.50	40.0	0.020	.	.	.	.	
4	38	C	0.125	1.250	1.56	1.2	.	.	X	.	.	
4	39	C	0.062	0.187	1.13	6.0	.	.	X	.	.	
4	40	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
4	41	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
4	42	C	0.062	0.625	0.87	1.4	0.089	.	.	.	.	
4	43	C	0.187	3.750	3.75	1.0	.	.	X	.	.	
4	44	C	0.187	10.000	15.00	1.5	.	.	X	.	.	
4	45	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
4	46	C	0.062	0.125	0.62	5.0	.	.	X	.	.	
4	47	C	0.062	0.312	0.62	2.0	.	.	X	.	.	
4	48	F	0.000	0.062	0.37	6.0	0.003	.	.	.	.	
5	49	F	0.000	0.062	1.94	31.0	0.015	.	.	.	.	
5	50	B	0.125	0.187	0.62	3.3	.	.	X	.	.	
5	51	F	0.000	0.062	0.31	5.0	.	.	.	X	.	
6	52	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
8	53	F	0.000	0.062	0.94	15.0	0.007	.	.	.	.	
9	54	C	0.062	0.250	1.06	4.3	.	.	X	.	.	
9	55	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
9	56	F	0.000	0.062	1.75	28.0	0.014	.	.	.	.	
9	57	C	0.062	0.625	0.94	1.5	.	.	X	.	.	
9	58	F	0.000	0.062	0.69	11.0	.	0.006	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 21-JUL-83

SAMPLE CODE: C06545-71

Grd Opn	Obj	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
9	59	F	0.000	0.062	0.37	6.0	.	.	.	X	.	
9	60	B	0.062	0.187	1.00	5.3	0.030	.	.	.	.	
9	61	F	0.000	0.062	2.44	39.0	0.019	.	.	.	.	
9	62	C	0.125	0.625	5.31	8.5	1.079	.	.	.	.	
9	63	M	0.062	0.062	0.62	10.0	0.006	.	.	.	.	
9	64	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
10	65	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
10	66	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
			Total Mass (Picogram)=				5.292	0.006				
			Total Count			=	46.	1.	14.	5.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-71 TABLE PREPARATION DATE: 21-JUL-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	38.	52595.	943.9	0.07 ± 0.02	1.44 ± 2.33	21.38 ±36.13
	Amphibole	1.	1384.	8.8	0.06 ± 0.00	0.69 ± 0.00	11.00 ± 0.00
	Other	6.	8304.		0.06 ± 0.00	0.42 ± 0.14	6.67 ± 2.25
	All Fiber	45.	62284.		0.07 ± 0.02	1.28 ± 2.17	19.19 ±33.55
Bundle	Chrysotile	4.	5536.	4712.6	0.56 ± 0.68	4.75 ± 4.49	11.63 ± 8.46
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	1.	1384.		0.19 ± 0.00	0.62 ± 0.00	3.33 ± 0.00
	All Bundle	5.	6920.		0.49 ± 0.61	3.92 ± 4.30	9.97 ± 8.22
Cluster	Chrysotile	3.	4152.	1658.7	0.54 ± 0.14	2.23 ± 2.68	3.74 ± 4.12
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	10.	13841.		1.76 ± 3.09	2.81 ± 4.38	2.98 ± 1.87
	All Cluster	13.	17993.		1.48 ± 2.73	2.68 ± 3.95	3.16 ± 2.36
Matrix	Chrysotile	1.	1384.	8.8	0.06 ± 0.00	0.62 ± 0.00	10.00 ± 0.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	2.	2768.		0.34 ± 0.40	1.19 ± 0.97	5.50 ± 3.54
	All Matrix	3.	4152.		0.25 ± 0.32	1.00 ± 0.76	7.00 ± 3.61

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 060883/C-1
Individual Grid Openings = 0.000072 Sq Cm
Number of Grid Openings = 10
Film Magnification = 20000

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 21-JUL-83

SAMPLE CODE: C06545-72 326

Grd Opn	ObJ	Str	Size (Micron) Depth	Width	Length	Ratio	Mass (Picogram) Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
1	1	F	0.000	0.062	1.25	20.0	.	.	.	X	.	
1	2	F	0.000	0.062	1.13	18.0	0.009	.	.	.	.	
1	3	F	0.000	0.062	1.25	20.0	0.010	.	.	.	.	
1	4	F	0.000	0.062	0.56	9.0	0.004	.	.	.	.	
1	5	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
3	6	F	0.000	0.062	0.31	5.0	0.002	.	.	.	.	
4	7	F	0.000	0.062	0.81	13.0	.	.	X	.	.	
4	8	F	0.000	0.062	1.63	26.0	0.013	.	.	.	.	
4	9	F	0.000	0.062	0.62	10.0	.	.	.	X	.	
4	10	B	0.062	0.125	1.63	13.0	0.033	.	.	.	.	
4	11	B	0.125	0.250	2.06	8.3	0.168	.	.	.	.	
4	12	F	0.000	0.062	0.75	12.0	0.006	.	.	.	.	
4	13	C	0.062	0.625	3.44	5.5	0.349	.	.	.	.	
6	14	F	0.000	0.062	0.44	7.0	0.003	.	.	.	.	
6	15	F	0.000	0.062	1.00	16.0	0.008	.	.	.	.	
7	16	F	0.000	0.062	0.62	10.0	.	0.006	.	.	.	
7	17	M	0.062	0.062	0.94	15.0	0.010	.	.	.	.	
7	18	F	0.000	0.062	0.56	9.0	.	.	X	.	.	
8	19	B	0.187	0.312	8.75	28.0	1.333	.	.	.	.	
8	20	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	
8	21	C	0.062	0.625	1.87	3.0	0.190	.	.	.	.	
8	22	C	0.062	0.187	0.62	3.3	0.019	.	.	.	.	
10	23	F	0.000	0.062	0.56	9.0	.	.	.	X	.	
10	24	C	0.062	0.125	1.25	10.0	0.025	.	.	.	.	
10	25	C	0.062	0.250	1.87	7.5	0.076	.	.	.	.	
10	26	F	0.000	0.062	0.62	10.0	0.005	.	.	.	.	
10	27	F	0.000	0.062	0.81	13.0	0.006	.	.	.	.	
10	28	F	0.000	0.125	1.63	13.0	.	.	.	X	.	
10	29	F	0.000	0.062	0.50	8.0	0.004	.	.	.	.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
INDIVIDUAL OBJECT DATA TABLE (F=FIBER, B=BUNDLE, C=CLUSTER, M=MATRIX)
TABLE PREPARATION DATE: 21-JUL-83

SAMPLE CODE: C06545-72

Grd			Size (Micron)				Mass (Picogram)					
Opn	Obj	Str	Depth	Width	Length	Ratio	Chrysotile	Amphibole	Ambig	Not Asbe	No Patt	X-Ray
							2.284	0.006				
Total Mass (Picogram)=												
Total Count =							22.	1.	2.	4.	0.	

IIT RESEARCH INSTITUTE STRUCTURE ANALYSIS DATA
SINGLE SAMPLE SUMMARY TABLES
SAMPLE CODE: C06545-72 TABLE PREPARATION DATE: 21-JUL-83

Aerosol Object Count And Calculated Object Mass Characteristics

Object Structure	Type	Actual Object Count	Number Concen. (Number Per Cu M)	Mass Concen. (Picogram Per Cu M)	Average Width (Micron)	Average Length (Micron)	Average Length To Width Ratio
Fiber	Chrysotile	13.	17105.	106.3	0.06 ± 0.00	0.78 ± 0.38	12.46 ± 6.01
	Amphibole	1.	1316.	7.6	0.06 ± 0.00	0.62 ± 0.00	10.00 ± 0.00
	Other	6.	7895.		0.07 ± 0.03	0.91 ± 0.44	12.33 ± 4.18
	All Fiber	20.	26316.		0.07 ± 0.01	0.81 ± 0.38	12.30 ± 5.26
Bundle	Chrysotile	3.	3947.	2017.9	0.23 ± 0.10	4.15 ± 3.99	16.42 ±10.31
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	0.	0.		0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	All Bundle	3.	3947.		0.23 ± 0.10	4.15 ± 3.99	16.42 ±10.31
Cluster	Chrysotile	5.	6579.	868.6	0.36 ± 0.24	1.81 ± 1.05	5.87 ± 2.94
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	0.	0.		0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	All Cluster	5.	6579.		0.36 ± 0.24	1.81 ± 1.05	5.87 ± 2.94
Matrix	Chrysotile	1.	1316.	12.5	0.06 ± 0.00	0.94 ± 0.00	15.00 ± 0.00
	Amphibole	0.	0.	0.0	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	Other	0.	0.		0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	All Matrix	1.	1316.		0.06 ± 0.00	0.94 ± 0.00	15.00 ± 0.00

Sample Collection and Preparation Data

Air Volume = 1.00 Cu M
Deposit Area = 1.00 Sq Cm
Ashed Area = 1.00 Sq Cm
Redeposit Area = 1.00 Sq Cm

Grid Data

Grid ID: 060883/C-2
Individual Grid Opening = 0.000076 Sq Cm
Number of Grid Openings = 10
Film Magnification = 20000

INDEX TO TEM DATA

PAGE	IITRI SAMPLE CODE	FILTER NUMBER	OPERATION
70-75	C06545-017	145-B-151	COAC
76-83	C06545-018	147-B-156	COAC
84-88	C06545-019	149-B-161	COAC
89-96	C06545-020	151-B-166	COAC
97-105	C06545-022	153-B-171	COAC
106-110	C06545-023	155-B-175	COAC
111-116	C06545-024	157-B-181	COAC
117-124	C06545-027	159-B-187	COAC
125-130	C06545-028	159-D-189	COAC
131-135	C06545-031	161-B-193	COAC
136-140	C06545-33	210	COAC
141-144	C06545-35		COAC
145-149	C06545-37	168-A-222	COAC
150-154	C06545-34	211	COAC
155-159	C06545-36	219	COAC
160-164	C06545-38	223	COAC
165-169	C06545-39	230	ICOAC
170-174	C06545-41		ICOAC
175-176	C06545-43	234	ICOAC
177-181	C06545-45	236	ICOAC
182-186	C06545-40	231	ICOAC
187-191	C06545-42	233	ICOAC
192-193	C06545-44	235	ICOAC
194-195	C06545-46	237	ICOAC
196-197	C06545-021	152-B-169	BL
198-199	C06545-025	150-B-184	BL
200-201	C06545-026	150-K-165	BL
208-203	C06545-029	160-B-190	BL
204-206	C06545-030	160-K-191	BL
207-208	C06545-032	162-B-96	BL
209-210	C06545-61	290	Mill BL
211-212	C06545-68	310	BL
213-214	C06545-076	346	AC BL
215-216	C06545-85	378	Mill BL
217-219	C06545-73	195-A-330	ACSD
220-224	C06545-074	196-A-334	ACSD
225-226	C06545-081	197-A-338	ACSD
227-231	C06545-075	198-A-342	ACSD
232-234	C06545-077	200-A-350	ACSD
235-236	C06545-078	201-A-354	ACSD
237-238	C06545-079	203-A-358	ACSD
239-242	C06545-080	203-A-362	ACSD
243-247	C06545-55	177-A-258	MS
248-252	C06545-56	179-A-262	MS
253-256	C06545-57	790-A-266	MS
257-263	C06545-58	100-A-270	MS
264-266	C06545-59	101--274	MS
267-271	C06545-60	102-A-278	MS
272-276	C06545-62	103-A282	MS
277-284	C06545-63	104-A-286	MS
285-286	C06545-082	204-A-366	MD
287-288	C06545-083	205-A-370	MD

INDEX TO TEM DATA

PAGE	IITRI SAMPLE CODE	FILTER NUMBER	OPERATION
289-290	C06545-084	207-A-374	MD
291-292	C06545-086	208-A-382	MD
293-294	C06545-087	209-A-386	MD
295-296	C60545-088	210-A-390	MD
297-298	C60545-089	211-A-394	MD
299-300	C60545-090	212-A-398	MD
301-305	C06545-33	210	MD
306-309	C06545-35	815	MD
310-312	C06545-47	226	MD
313-317	C06545-39	230 H/L	ACSS
318-319	C06545-43	234 H/L	ACSS
320-324	C06545-48	230	ACSS
325-329	C06545-54	234 A/L	ACSS
330-334	C06545-49	240	ACSS
335-338	C06545-50	242	ACSS
339-341	C06545-51	246	ACSS
342-343	C06545-52	250	ACSS
344-346	C06545-53	254	ACSS
347-351	C06545-64	186-A-294	BSG
352-354	C06545-65	187-A-298	BSG
355-359	C06545-66	188-A-302	BSG
360-364	C06545-67	189-A-306	BSG
365-369	C06545-69	191-A-314	BSG
370-374	C06545-70	192-A-318	BSG
375-378	C06545-71	193-A-322	BSG
379-381	C06545-72	194-A-326	BSG

CODE:

COAC ....Asbestos Cement Sheet/Cut-off Wheel

ICOAC ...Inverted Filter Experiments COAC.

BL .....Blank and Clean-up Runs.

ACSD ....Asbestos Cement Sheet/Drill.

MS .....Millboard/Saw Experiments.

MD .....Millboard/Drill Experiments.

ACSS ....Asbestos Cement Sheet/Saw.

BSG .....Brake Shoes/Grind.

APPENDIX D

PCM DATA

TABLE D-1. FIBER COUNTS OF 42 MEMBRANE FILTER SAMPLES

Operation	Filter Number	Number Fibers 100 Fields	Operation	Filter Number	Number Fields 100 Fields
Saw AC Sheet	228	8	Drill AC Sheet	293	0
	229	2		333	2
	232	2		337	0
	233	1		341	1
	236	6		345	5
	237	11		351	0
	240	13		353	0
	241	4		357	1
	244	1		361	1
	245	3		365	0 (repeat)
	248	4			
	249	6	Drill Millboard	369	0
	252	9		373	0
	253	4		377	1
	256	2		381	0
	257	9		389	0 (repeat)
				393	0
Saw Millboard	261	8		397	0
	265	11		401	0
	269	17			
	273	11			
	277	7			
	281	8			
	285	6			
	289	13			

THE MOUNT SINAI MEDICAL CENTER
ONE GUSTAVE L. LEVY PLACE • NEW YORK, N.Y. 10029

Mount Sinai School of Medicine • The Mount Sinai Hospital

Environmental Sciences Laboratory
Cummings Basic Sciences Building
10 East 102 Street
New York, New York 10029
(212) 650-6173

September 14, 1983

Mr. Dennis Falgout
Engineering-Science, Inc.
10521 Rosehaven Street
Fairfax, VA 22030

Re: Your PO No. 286-8401. May 12, 1983

Dear Mr. Falgout:

This will report the results of phase contrast microscopic analyses of 42 membrane filter samples for asbestos concentrations, using the NIOSH method. The results in fibers per milliliter are as follows:

Number		Number		Number	
228	6.6	256	1.7	345	4.1
229	1.7	257	7.4	351	0.0
232	1.7	261	6.6	353	0.0
233	0.9	265	9.1	357	0.0
236	5.0	269	14.1	361	0.9
237	9.1	273	9.1	365	0.0 repeat
240	10.8	277	5.8	369	0.0
241	3.3	281	6.6	373	0.0
244	0.9	285	5.0	377	0.9
245	2.5	289	10.8	381	0.0
248	3.3	293	0.0	389	0.0 repeat
249	5.0	333	0.0	393	0.0
252	7.4	337	0.0	397	0.0
253	3.3	341	0.0	401	0.0

In addition, three bulk samples were analyzed for their asbestos content by polarized light microscopy and X-ray diffraction, with the following results:

millboard - 75-80% (± 5%) chrysotile asbestos
asbestos cement board - 30-40% (±5%) chrysotile
brake lining - 35-40% (±10%) chrysotile

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Please call me at (212) 650-6184 if there are any questions.

Respectfully submitted,

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ANR:jm